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1st PRINTING

SEGA

Sega Amusements Europe Limited.
42 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY. United Kingdom.
Telephone: +44 (0) 208 391 8090 Facsimile: +44 (0) 208 391 8099
email: mailbox@sega.co.uk Web: http://www.segaarcade.com

Play It! Amusements, inc.
252 Beinoris Drive, Wood Dale, IL. 60191, USA
USA Sales: +00 (1) 224 265 4287

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SEGA SNAKES & LADDERS OWNER'S MANUAL 420-0020UK

SEGA®

OWNER'S MANUAL

SEGA SNAKES & LADDERS™

IMPORTANT

- Before using this product, read this manual carefully to understand the contents herein stated.
- After reading this manual, be sure to keep it near the product or in a convenient place for easy reference when necessary.

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BEFORE USING THE PRODUCT, BE SURE TO READ THE FOLLOWING:

To maintain safety:
To ensure the safe operation of this product, be sure to read the following before usage.
The following instructions are intended for the users, operators and the personnel in charge of the operation of the product. After carefully reading and sufficiently understanding the warning displays and cautions, handle the product appropriately. Be sure to keep this manual close to the product or in a convenient place for future reference.

Herein, explanations which require special attention are enclosed with dual lines. Depending on the potentially hazardous degrees, the terms of DANGER, WARNING, CAUTION, etc. are used. Be sure to understand the contents of the displays before reading the text.

⚠ DANGER Indicates that mishandling the product by disregarding this pictograph will cause severe injury or death.

⚠ WARNING Indicates that mishandling the product by disregarding this warning will cause a potentially hazardous situation which can result in death or serious injury.

⚠ CAUTION Indicates that mishandling the product by disregarding this caution will cause a slight hazardous situation which can result in personal injury and/or material damage.

For the safe usage of the product, the following pictographs are used:

⚠ Indicates "HANDLE WITH CARE." In order to protect the human body and equipment, this display is attached to places where the Owner's Manual, Serviceman Manual and/or Service Manual should be referred to.

- **Perform work in accordance with the instructions herein stated.** Instructions for work are explained by paying attention to the aspect of accident prevention. Failing to perform work as per the instructions can cause accidents. In the case where only those who have technical expertise should perform the work to avoid hazardous situation, the instructions herein state that the site maintenance personnel should perform such work.
- **Be sure to turn off the power before working on the machine.** To prevent an electric shock, be sure to turn off the power before carrying out any work that requires direct contact with the interior of the product. If the work is to be performed in the power-on status, the Instruction Manual herein always states to that effect.
- **Be sure to ground the Earth Terminal.** (This is not required in the case where a power cord with earth is used.)
- **This product is equipped with the Earth Terminal.** When installing the product, connect the Earth Terminal to the "accurately grounded indoor earth terminal" by using an earth wire. Unless the product is grounded appropriately, the user can be subject to an electric shock. After performing repair, etc. for the control equipment, ensure that the Earth Wire is firmly connected to the control equipment.
- **Ensure that the Power Supply used is equipped with an Earth Leakage Breaker.** This product does not incorporate the Earth Leakage Breaker. Using a power supply which is not equipped with the Earth Leakage Breaker can cause a fire when earth leakage occurs.
- **Be sure to use fuses which meet the specified rating.** (Only for the machines which use fuses.) Using fuses exceeding the specified rating can cause a fire and an electric shock. (Only for the machines which use fuses.)Using fuses exceeding the specified rating can cause a fire and an electric shock.

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- **Specification changes (removal of equipment, conversion and addition) not designated by SEGA are not allowed.** The parts of the product include warning labels for safety, covers for personal protection, etc. It is very hazardous to operate the product by removing parts and/or modifying the circuits. Should doors, lids and protective parts be damaged or lost, refrain from operating the product, and contact where the product was purchased from or the office herein stated. SEGA shall not be held responsible for any accidents, compensation for damage to a third party, resulting from the specifications not designated by SEGA.
- Ensure that the product meets the requirements of appropriate electrical specifications. Before installing the product, check for electrical specifications. SEGA products have a nameplate on which electrical specifications are described. Ensure that the product is compatible with the power supply voltage and frequency requirements of the location. Using any electrical specifications different from the designated specifications can cause a fire and an electric shock.
- Install and operate the product in places where appropriate lighting is available, allowing warning labels to be clearly read. To ensure safety for the customers, labels and printed instructions describing potentially hazardous situations are applied to places where accidents can be caused. Ensure that where the product is operated has sufficient lighting allowing the warnings to be read. If any label is peeled off, apply it again immediately. Please place an order with where the product was purchased from or the office herein stated.
- When handling the monitor, be very careful. (Applies only to products with monitors.) Some of the monitor parts are subject to high tension voltage. Even after turning off the power, some portions are still subject to high tension voltage sometimes. Monitor repair and replacement should be performed only by those technical personnel who have knowledge of electricity and technical expertise.
- Be sure to adjust the monitor properly. (Applies only to products with monitors.) Do not operate the product leaving on-screen flickering or blurring as it is. Using the product with the monitor not properly adjusted may cause dizziness or a headache to an operator, a player, or the customers.
- When transporting or reselling this product, be sure to attach this manual to the product.
- *In the case where commercially available monitors and printers are used in this product, only the contents relating to this product are explained herein. Some commercially available equipment has functions and reactions not stated in this manual. Read this manual together with the specific instruction manual of such equipment.*
- *Descriptions herein contained may be subject to improvement changes without notice.*
- *The contents described herein are fully prepared with due care. However, should any question arise or errors be found, please contact SEGA.*

INSPECTIONS IMMEDIATELY AFTER TRANSPORTING THE PRODUCT TO THE LOCATION

Normally, at the time of shipment, SEGA products are in a status allowing for usage immediately after transporting to the location. Nevertheless, an irregular situation may occur during transportation. Before turning on the power, check the following points to ensure that the product has been transported in a satisfactory status.

- Are there any dented portions or defects (cuts, etc.) on the external surfaces of the cabinet?
- Are casters and adjusters damaged?
- Do the power supply voltage and frequency requirements meet with those of the location?
- Are all wiring connectors correctly and securely connected? Unless connected in the correct way, connector connections can not be made accurately. Do not insert connectors forcibly.
- Do power cables have cuts and dents?
- Are all accessories available?
- Can all doors and lids be opened with the accessory keys? Can doors and lids be firmly closed?

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INTRODUCTION

This manual is intended to provide detailed descriptions together with all necessary information covering the general operation of electronic assemblies, electro-mechanicals, servicing control, spare parts, etc. for the product, "SEGA'S SNAKES AND LADDERS"

This manual is intended for the owners, personnel managers in charge of operation of this product.
Operate the product after carefully reading and sufficiently understanding the instructions.

In the unlikely event that the product does not function correctly, DO NOT allow anyone other than a technician to touch the internal system. Turn off the power to the machine, making sure to unplug the electrical cord from the outlet, and contact the office listed below or the point-of-purchase for this product.

Use of this product is unlikely to cause physical injuries or damage to property. However, points that require special attention are indicated by bold text, the word "IMPORTANT" and the symbol below.

STOP IMPORTANT

Indicates important information that, if ignored, may result in the mishandling of the product and cause faulty operation or damage to the product.

Sega Amusements Europe Limited.

42 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY. United Kingdom.

Telephone:	+44 (0) 208 391 8090	Facsimile:	+44 (0) 208 391 8099
email:	sales@segaarcade.com	Web:	http://www.segaarcade.com.

Sega Total Solutions

42 Barwell Business Park, Leatherhead Road, Chessington, Surrey, KT9 2NY. United Kingdom.

Telephone:	+44 (0) 208 391 8060	Facsimile:	+44 (0) 208 391 8096
email:	sales@segaarcade.com	Web:	http://www.segaarcade.com/spares

Play it! Amusements

252 Beinoris Drive, Wood Dale, IL. 60191, USA

USA Sales/Service +00(1) 224 265 4287

SPECIFICATIONS

Machine Dimensions:	
Cabinet w/o Billboard & Body (3)	0,99m (39in.) [Width] x 0.85m (33.5in.) [Depth] 2.24m (88.2in.) [Height]
Cabinet with Billboard	1.38m (54.3in.) [Width] x 0.85m (33.5in.) [Depth] 2.73m (107.4in.) [Height]
Weight:	120Kg
Electrical Consumption	
Operating Voltage	AC240V (switchable to AC120V via PSU)
Current	0.4A @ AC240V 0.4A @ AC220V 0.6A @ AC120V

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Definition of 'Site Maintenence Personnel or Other Qualified Individuals

STOP IMPORTANT

Procedures not described in this manual or marked as 'to be carried out by site maintenance personnel or other qualified professionals' should not be carried out by personnel without the necessary skill or technology. Work carried out by unqualified persons may cause serious accidents, including electrocution.

Parts replacement, maintenance inspections and troubleshooting should be carried out by site maintenance personnel or other qualified professionals. This manual includes directions for potentially dangerous procedures which should only be carried out by professionals with the appropriate specialised knowledge.

The site maintenance personnel or other qualified professionals mentioned in this manual are defined as follows:

Site maintenance personnel:
Individuals with experience in maintaining amusement equipment, vending machines, etc., working under the supervision of the owner/operator of this product to maintain machines within amusement facilities or similar premises by carrying out everyday procedures such as assembly, maintenance inspections, and replacement of units/expendable parts.

Activities to be carried out by site maintenance personnel:
Amusement equipment/vending machine assembly, maintenance inspection and replacement of units/expendable parts.

Other qualified professionals:
Persons employed by amusement equipment manufacturers, or involved in design, production, testing or maintenance of amusement equipment. The individual should have either graduated from technical school or hold similar qualifications in electrical/electronics/mechanical engineering.

Activities to be carried out by other qualified professionals:
Amusement equipment/vending machine assembly, repair/adjustment of electrical/electronic/mechanical parts.

Waste of Electrical and Electronic Equipment (WEEE) Statement.

The WEEE (Waste of Electrical and Electronic Equipment) directive places an obligation on all EU based manufacturers and importers of Electrical and Electronic Equipment to take back products at the end of their useful life. Sega Amusements Europe Ltd accepts its responsibility to finance the cost of treatment and recovery of redundant WEEE in the United Kingdom in accordance with the specified WEEE recycling requirements.

The symbol shown below will be on all products manufactured from 13th August 2005, which indicates this product must NOT be disposed of with other normal waste. Instead, it is the user's responsibility to dispose of their waste equipment by arranging to return it to a designated UK collection point for the correct recycling of waste electrical and electronic equipment.

For more information about where you can send your waste equipment for recycling contact your local authority office.

For non-UK users contact your local authority office for information on the recycling of Waste Electrical and Electronic Equipment.

Battery Recycling Statement.

The EC Directive on Batteries and Accumulators (2006/66/EC) aims to minimise the impact of batteries on the environment and encourage the recovery of the materials they contain. To achieve increased collection and recycling of waste batteries, the Directive places 'producer responsibility' obligations on manufacturers and importers of portable, industrial and automotive batteries.

The symbol shown below will be on all equipment fitted with batteries from 26th September 2008 and indicates they must NOT be disposed of with other normal waste. Instead, it is the user's responsibility to dispose of used batteries by arranging to return them to a designated collection point for the correct recycling.

For more information about where you can send your waste batteries for recycling contact your local authority office.

REGISTERED IN ENGLAND REGISTERED NO. 1711515

REGISTERED OFFICE: BLOCK C 42 BARWELL BUSINESS PARK, CHESSINGTON, SURREY KT9 2NY

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RoHS Statement.

Sega amusements europe are to the best of our knowledge acting in accordance with the European Union RoHS2 Directive 2011/65/EU and hearby declare that RoHS2 restricted substances are not intentionally added to this product over the permitted limits.

These limits are:

Lead (0.1%)
Mercury (0.1%)
Cadmium (0.1%)
Hexavalent chromium (0.1%)
Polybrominated biphenyls (0.1%)
Polybrominated diphenyl ethers (PBDE) (0.1%)

Products containing the substances listed above are in concentration levels of that below the maximum limits and are understood to be in compliance with Directive 2011/65/EU of the European Parliment.

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1 HANDLING PRECAUTIONS

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.
Noncompliance with the following points or inappropriate handling running counter to the cautionary matters herein stated can cause personal injury or damage to the machine.

⚠ WARNING

Before performing work, be sure to turn the power off. Performing the work without turning the power off can cause an electric shock or short circuit. In cases where work should be performed in the status of power on, this manual always states to that effect.

To avoid an electric shock or short circuit, do not plug in or unplug quickly.

To avoid an electric shock, do not plug in or unplug with a wet hand.

Do not expose power cords or earth wires on the surface, (floor, passage, etc.) If exposed, the power cords and earth wires are susceptible to damage. Damaged cords and wires can cause an electric shock or short circuit.

To avoid causing a fire or an electric shock, do not put things on or damage the power cords.

When or after installing the product, do not unnecessarily pull the power cord. If damaged, the power cord can cause a fire or an electric shock.

In case the power cord is damaged, ask for a replacement through where the product was purchased from or the office herein stated. Using the cord as is damaged can cause fire, an electric shock or leakage.

Be sure to perform grounding appropriately. Inappropriate grounding can cause an electric shock.

Be sure to use fuses meeting the specified rating. Using fuses exceeding the specified rating can cause a fire or an electric shock.

Be sure that connections such as IC BD are made properly. Insufficient insertion can cause an electric shock.

Specification changes, removal of equipment, conversion and/or addition, not designated by SEGA are not permitted.

Failure to observe this may cause a fire or an electric shock. Non-compliance with this instruction can have a bad influence upon physical conditions of the players or the onlookers, or result in injury during play.

SEGA shall not be held responsible for damage, compensation for damage to a third party, caused by specification changes not designated by SEGA.

Do not perform any work or change parts not listed in this manual. Doing so may lead to an accident.

If you need to perform any work not listed in this manual, request work from the office indicated in this manual or the point of purchase, or inquires for details.

Be sure to perform periodic maintenance inspections herein stated.

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IMPORTANT

For the IC board circuit inspections, only the use of a logic tester is recommended. Using a Multi Tester or General Purpose Tester may result in damage to IC Circuits.

Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

This video gaming cabinet utilises a motorised steering feedback system. Do not attempt to service this part or any other part in close proximity to the steering mechanism whilst power is applied.

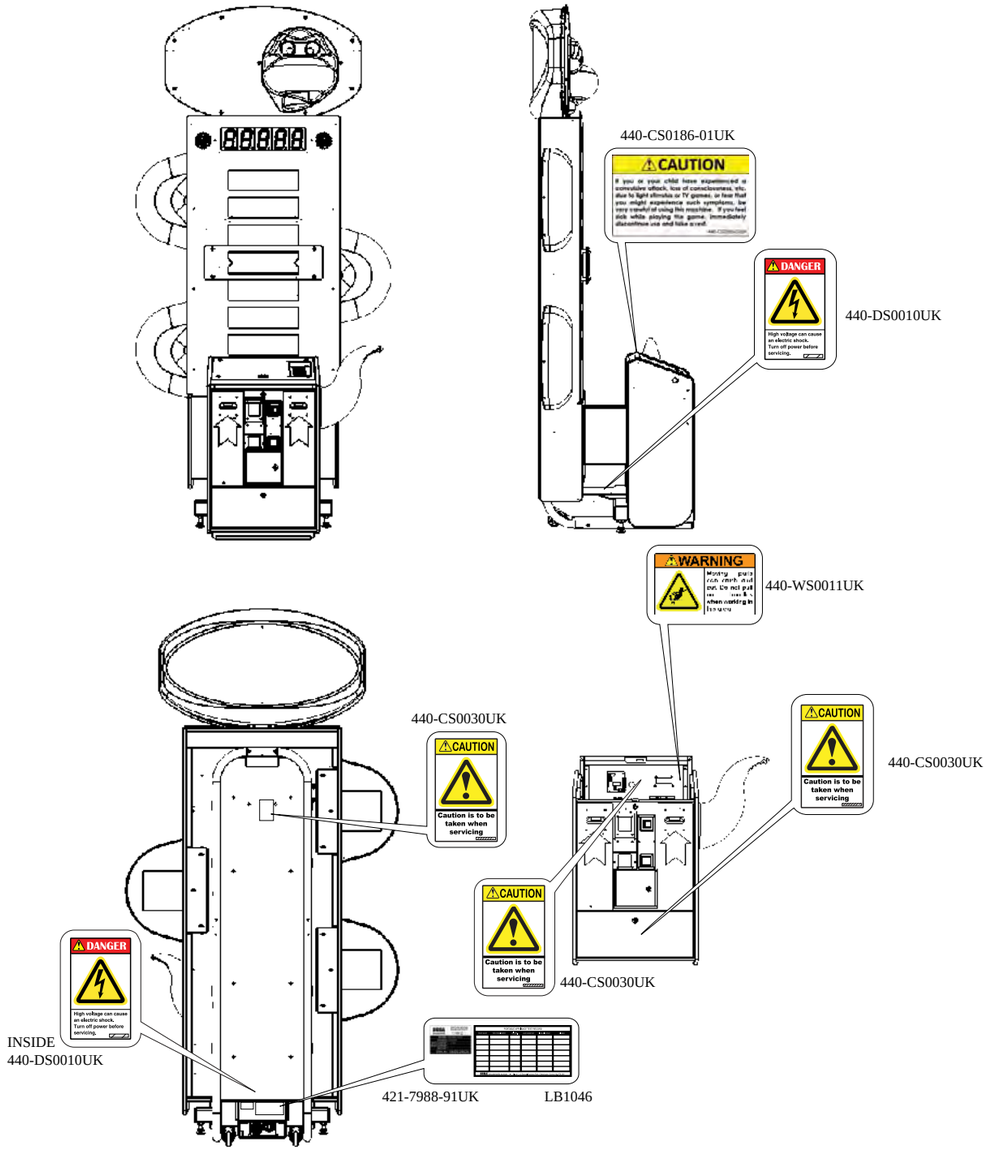
Some parts are not designed and manufactured specifically for this game machine. The manufacturers may discontinue, or change the specifications of such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed game machine whether or not a warranty period has expired.

CONCERNING THE STICKER DISPLAY

This SEGA product has stickers attached describing the product manufacture No. (Serial No.) and Electrical Specifications. It also has a Sticker describing where to contact for repair and for purchasing parts.
When inquiring about or asking for repairs, mention the Serial No. and Name of Machine indicated on the Sticker. The Serial Number indicates the product register. Identical machines could have different parts depending on the date of production. Also, improvements and modifications might have been made after the publication of this manual. In order to ensure you order the correct parts, mention the Serial No. when contacting the applicable places.

CONCERNING WARNING DISPLAYS

This SEGA product has warning displays on stickers, labels and/or printed instructions adhered/attached to or incorporated in the places where a potentially hazardous situation could arise. The warning displays are intended for accident prevention for customers and for avoiding hazardous situations relating to maintenance and servicing work. Some portions of the cabinet contain high voltage and may cause accidents if touched. When performing maintenance, be very careful of the warning displays. It is especially important that any complex repair and replacement work not mentioned herein should be performed by those technical personnel who have knowledge of electricity and technical expertise.
In order to prevent accidents, caution any customer ignoring the warnings to cease and desist immediately.



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2 PRECAUTIONS REGARDING INSTALLATION

⚠ WARNING

This product is an indoor game machine. Do not install it outside. Even indoors, avoid installing in places mentioned below so as not to cause a fire, electric shock, injury and/or malfunction.

Places subject to rain or water leakage, or places subject to high humidity in the proximity of an indoor swimming pool and/or shower, etc.

Places subject to direct sunlight, or places subject to high temperatures in the proximity of heating units, etc.

Places filled with inflammable gas or vicinity of highly inflammable/volatile chemicals or hazardous matter.

Dusty places.

Sloped surfaces.

Places subject to any type of violent impact.

Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.

Areas where the temperature exceeds the applicable temperature (ambient temperature) range of 5 to 30 degrees centigrade.

LIMITATIONS OF USAGE

⚠ WARNING

Be sure to check the Electrical Specifications. Ensure that this product is compatible with the location's power supply, voltage, and frequency requirements. A plate describing Electrical Specifications is attached to the product. Non-compliance with the Electrical Specifications can cause a fire and electric shock.

This product requires a breaker and earth mechanism as part of the location facilities. Using the product without these can cause a fire and electric shock.

Ensure that the indoor wiring for the power supply is rated at 15 A or higher (AC single phase 100 V ~ 120 V area), and 7 A or higher (AC 220 V ~ 240 V area). Non-compliance with the Electrical Specifications can cause a fire and electric shock.

Be sure to use an independent power supply equipped with an earth leakage breaker. Using a power supply without an earth leakage breaker can cause an outbreak of fire if a power surge occurs.

Putting many loads on one electrical outlet can cause generation of heat and a fire resulting from overload.

When using an extension cord, ensure that the cord is rated at 7A or higher (AC 100 V ~ 120 V area) and 3A or higher (AC 220 V ~ 240 V area). Using a cord rated lower than the specified rating can cause a fire and electric shock.

STOP IMPORTANT

Securing a safe area for operation as described in this manual will ensure safe operation for players and observers.

SEGA shall not be held responsible for damage or compensation for damage to a third party, resulting from the failure to observe this instruction.

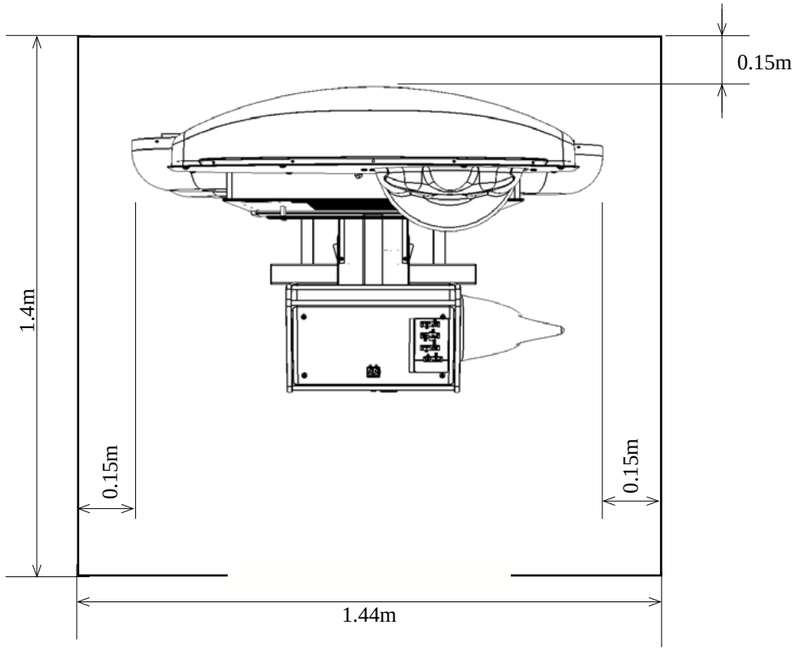
OPERATION AREA (SINGLE CABINET)

⚠ WARNING

For the operation of this machine, please secure a minimum area of 1.4m (D) and 1.44m (W)

Be sure to provide sufficient space specified in this manual. Do not allow objects to block the ventilation ports. It can cause generation of heat and a fire.

Sufficient space either side of the playing area must be allowed for the player to enter or exit the game safely.



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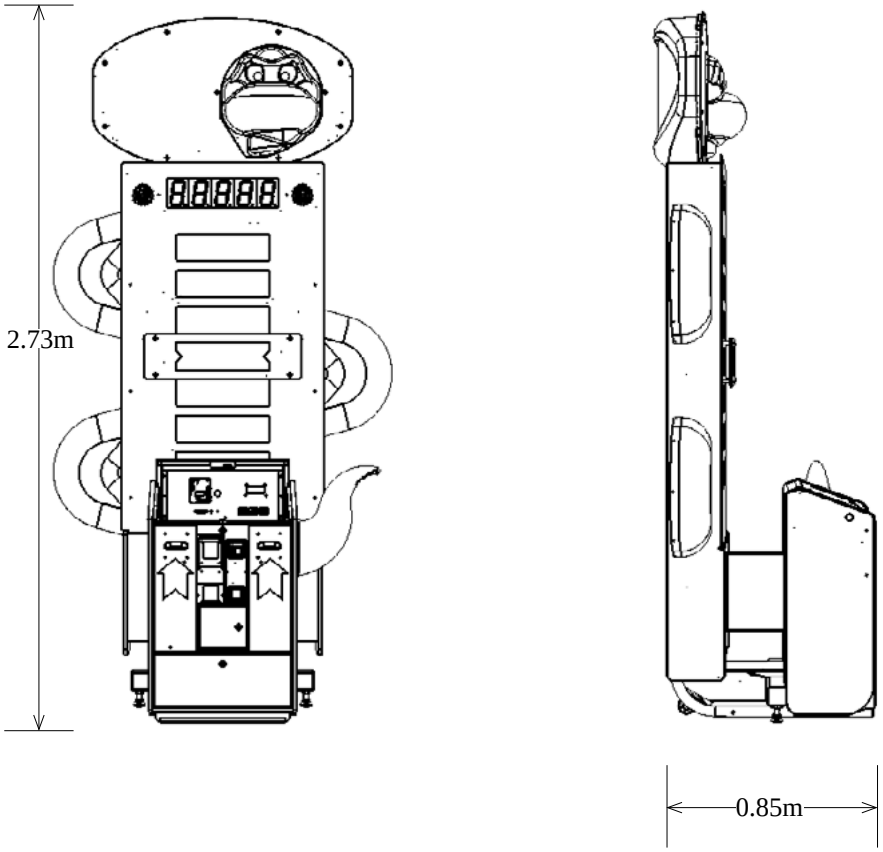
IMPORTANT

To install this product, the entrance must be at least 0.85m in width and 2.73 m in height.

Do not attempt to push/pull the machines whilst holding onto the Controller or Assy Billboard. This may result in part damage and or personal injury.



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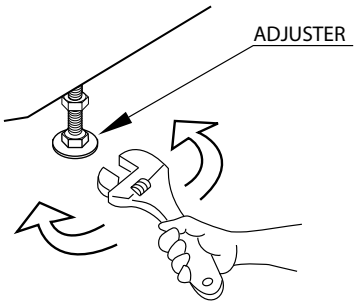
3 PRECAUTIONS REGARDING OPERATION

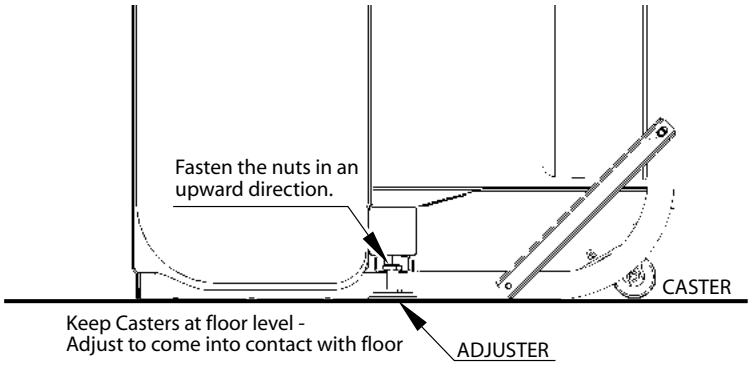
To avoid injury and trouble, be sure to pay attention to the behavior of visitors and players.

⚠ WARNING

In order to avoid accidents, check the following before starting the operation:

- **To ensure maximum safety for the players and the customers, ensure that where the product is operated has sufficient lighting to allow any warnings to be read. Operation under insufficient lighting can cause bodily contact with each other, hitting accident, and/or trouble between customers.**
- **It is suggested to ensure a space allowing the players who feel sick while playing the game to take a rest.**
- **Check if all of the adjusters are in contact with the surface. If they are not, the Cabinet can move and cause an accident.**
- **Do not put any heavy item on this product. Items, if placed on this product may fall and cause injury to the player / observer.**
- **Do not climb on the product. Climbing on the product can cause falling down accidents. To check the top portion of the product, use a step ladder.**
- **To avoid electric shock, check that all doors and covers are inplace and in good condition**
- **To avoid electric shock, short circuit and or parts damage, do not put the following items on or in the periphery of the product. Flower vases, flowerpots, cups, water tanks, cosmetics, and receptacles/containers/ vessels containing chemicals or water.**





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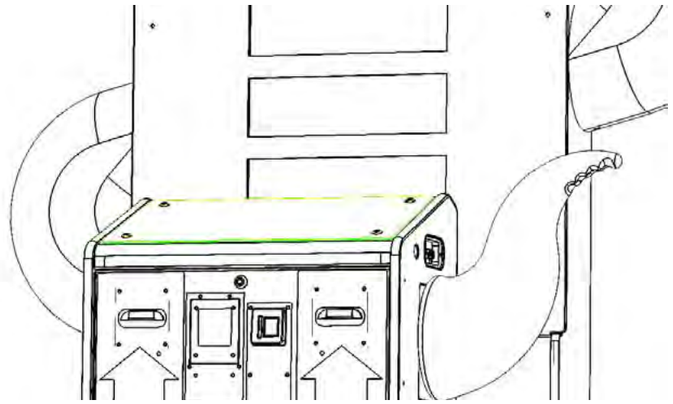
⚠ WARNING

- **To avoid electric shock, ensure that all covers and panels are undamaged and fitted. Do not operate with covers removed.**
- **To avoid electric shock, short circuit and/or parts damage, do not put the following items on or in the periphery of the product.**
- **Flower vases, flowerpots, cups, water tanks, cosmetics, and receptacles/ containers/vessels containing chemicals and water.**

⚠ CAUTION

- **To avoid injury, be sure to provide sufficient space by considering the potentially crowded situation at the installation location. Insufficient installation space can cause making bodily contact with each other, hitting accidents, and/or trouble between customers.**
- **Everyday when cleaning the Controllers, inspect the controllers and make sure that there are no cracks in the surface, and that the fastening screws are not loose. If the game is played with cracks or loose screws, it can cause injuries to the player.**



- **It is recommended that wet towels (paper towels) be provided.**

DURING OPERATION (PAYING ATTENTION TO CUSTOMERS)

To avoid injury and trouble, be sure to constantly give careful attention to the behavior and manner of the visitors and players.

⚠ WARNING

- **For safety reasons, do not allow any of the following people to play the game.**
- **Those who have high blood pressure or a heart problem.**
- **Those who have experienced muscle convulsion or loss of consciousness when playing video games, etc.**
- **Those who have neck or spinal cord problems.**
- **Those who are intoxicated or under the influence of drugs.**
- **Pregnant women.**
- **Those who are not in good health.**
- **Those who do not follow the attendant's instructions.**
- **Those who cannot grasp the Control Unit securely because of immobility in fingers, hands or arms.**
- **Persons who disregard the product's warning displays.**
- **This product is intended for a single player only. Having two or more persons simultaneously playing this product can result to injury to the player and possible damage to the product.**
- **Even players who have never been adversely affected by light stimulus might experience dizziness or headache depending on their physical condition when playing the game.**
- **Small children are especially likely to experience these symptoms. Caution guardians of small children to keep watch on their children during play.**
- **Instruct those who feel sick during play to have a medical examination.**
- **To avoid injury from falls and electric shocks due to spilled drinks, instruct the player not to place heavy items or drinks on the product.**
- **To avoid electric shocks and short circuits, do not allow customers to put hands and fingers or extraneous matter in the openings of the product or small openings in or around the doors.**
- **To avoid falls and resulting injury, immediately stop the customer from leaning against or climbing on the product, etc.**
- **To avoid electric shock and short circuit, do not allow customers to unplug the power plug without a justifiable reason.**
- **Instruct the guardians of small children to keep an eye on their children.**
- **Children cannot sense danger. Allowing small children to get near a player who is playing the game could result in the children being bumped, struck or knocked down.**

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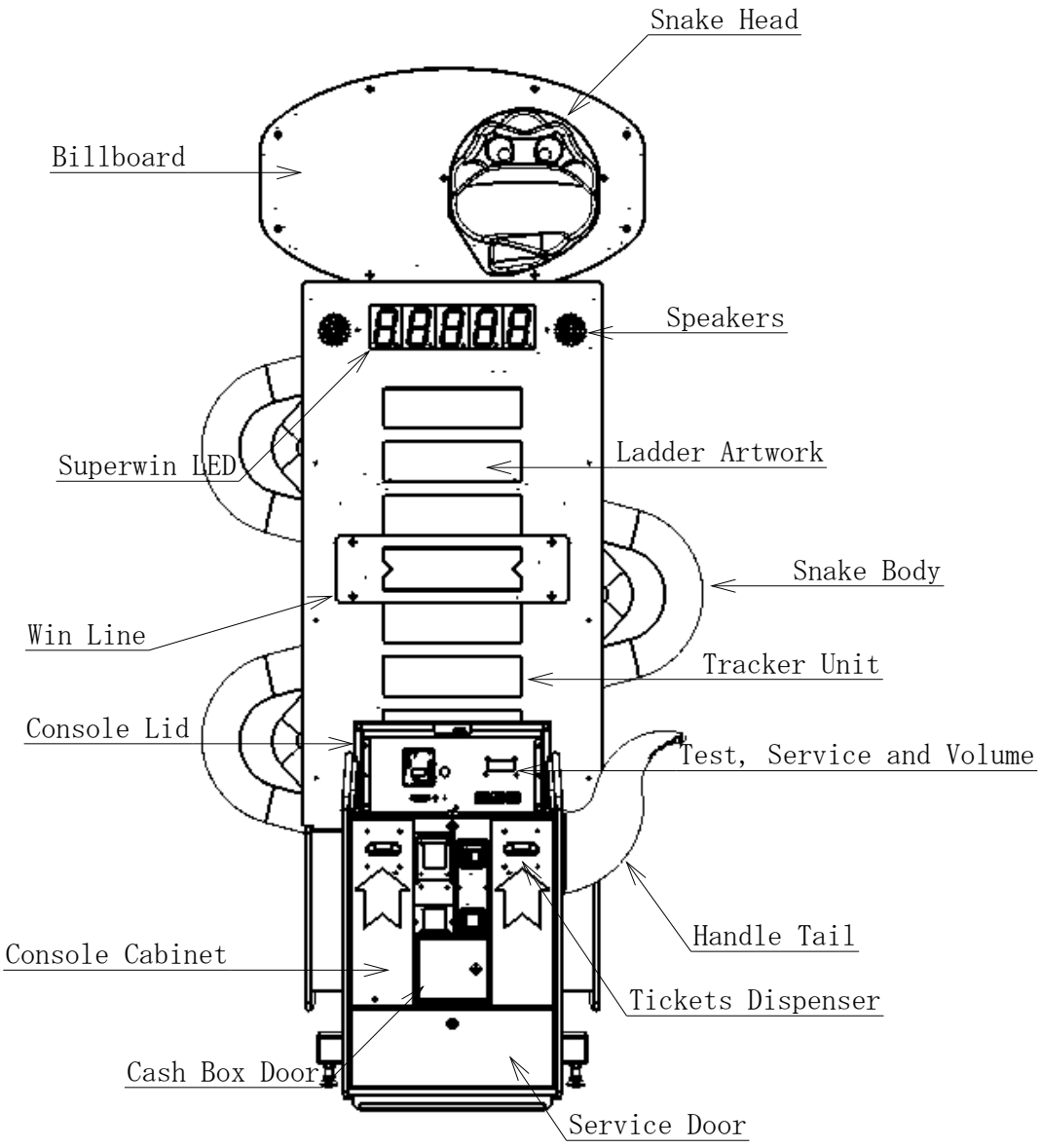
4 PART DESCRIPTIONS

Below is a diagram which outlines and identifies certain key components.
Please refer to these terms when speaking to technical or fault finding departments or when ordering raplacement or spare parts.



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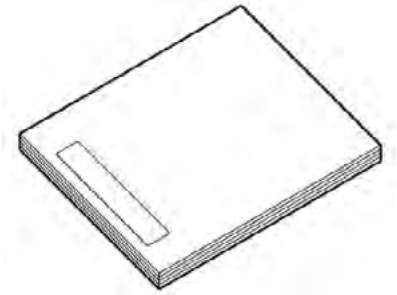
5 ACCESSORIES

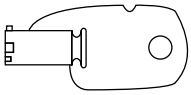
Confirm that the accessories listed in the table below are present when setting up the product.
Accessories marked “Spare” in the note column are consumable items but included as spares.

440-CS0186UK
Sticker C Epilepsy Multi (1)

DESCRIPTION: OWNER’S MANUAL
Part No. (Qty.): 420-00XXUK(1)

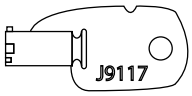
Parts not labeled with part numbers are as yet unregistered or cannot be registered. Be sure to handle all parts with care, as some parts are not available for purchase separately.



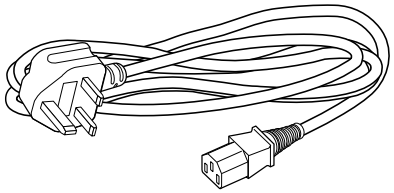


KEY
(2)

For the cashbox door
(Located inside the coin chute door at time of shipment)



KEY MASTER
220-5575-01UK (4)
For operating/closing the doors



POWER CORD
LM1227 (1) <UK>
LM1246 (1) <EU>
or
LM1226 (1) <US>

For installation. See chapter 6.

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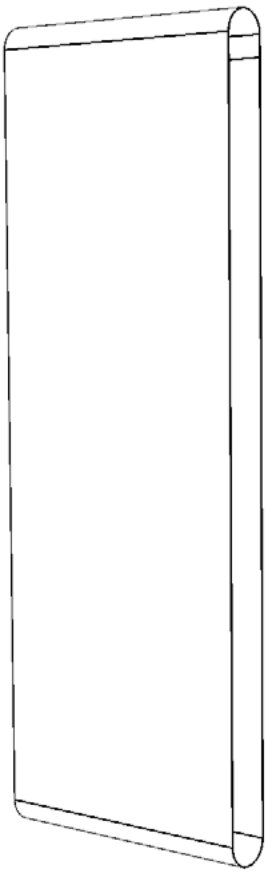

FEATURE BAND (2)
SL-1201-01UK - FEATURE BAND £2/€2/$2
SL-1201-03UK - FEATURE BAND .50p/.50¢

For differnt prize values

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6 ASSEMBLY AND INSTALLATION

⚠ WARNING

- **Perform assembly work by following the procedure herein stated. Failure to comply with the instructions can cause electric shock.**
- **Perform assembly as per this manual. Since this is a complex machine, incorrect assembling can cause an electric shock, machine damage and/or improper functioning as per specified performance.**
- **When assembling, more than one person is required. Depending on the assembly work, there are some cases in which working by one person alone can cause personal injury or parts damage.**
- **Ensure that connectors are properly connected. Improper connections can cause electric shock.**
- **Be careful not to damage the wires. Damaged wires may cause electric shock or short circuit or present a risk of fire.**
- **Do not unnecessarily push the display screen.**
- **This work should be carried out by site maintenance personnel or other qualified professionals. Work performed by non-technical personnel can cause a severe accident such as electric shock. Failing to comply with this instruction can cause a severe accident such as electric shock to the player during operation. If no one with proper technological expertise is available, request service from the office indicated in this document or the point of purchase so as to ensure safety.**
- **Provide sufficient space so that assembling can be performed. Performing work in places with narrow space or low ceiling may cause an accident and assembly work to be difficult.**
- **To perform work safely and avoid serious accident such as the cabinet falling down, do not perform work in places where step-like grade differences, a ditch, or slope exist.**
- **This product does not use any connectors other than those connected to and used by the game board when it leaves the factory. Do not needlessly connect wires to unused connectors. This could lead to overheating, generation of smoke and burn related injuries.**

⚠ CAUTION

- **Handle molded parts with care. Excessive weight or pressure may cause them to break and the broken pieces may cause injury.**
- **To perform the operation safely and accurately you must use a safe, steady footstool or stepladder. Working without this may lead to a fall and possible injury.**

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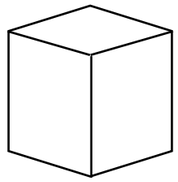
6-1 INSTALLING THE CABINET

⚠ CAUTION

- **Billboard weighs approximately 10kg once assembled. Have at least 2 people during this operation. Working alone could result in personal injuries, etc.**
- **To perform work safely and securely, be sure to prepare a step which is in a safe and stable condition. Performing work without using a step may lead to injury of damage to components.**

Tools required for installation

Step or Step Ladder



M8 Socket wrench or Spanner
- Attaching Billboard

Allen Key nos 4, 5 and 6 (M5) (M6) (M8)
- Attaching Billboard Panel to Assy Billboard.

Adjustable Spanner / Wrenck
- Adjust Leg Levellers

Required fixings and where to find them.

Fixings required for Billboard Installation.

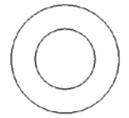
These fixings are located within their respective fixing points within the cabinet.

030-000830-SB M8x30 BLT W/S BLK (4)

These fixings are located within the cashbox

020-000612-0C M6X12 SKT CAP CRM (2)

These fixings are located within their respective fixing points within the cabinet.



068-852216-0B M8 WSHR 22OD FLT BLK (4)

Fixings required for Snake Body installation (located within the Snake Body segments)

These fixings are located within their respective fixing points within the cabinet.

030-000635-S M6x35 BLT W/S PAS (9)

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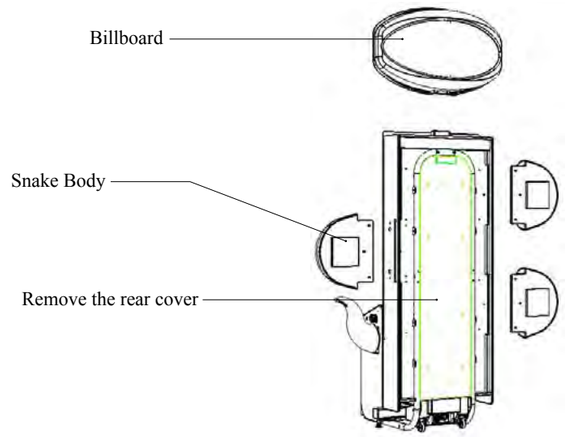
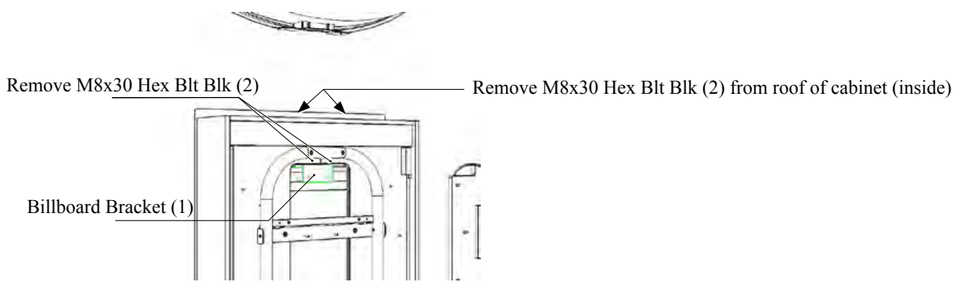
6-1-1 ASSEMBLING THE BILLBOARD

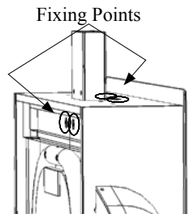
1 Identify parts required for installation. Remove the Rear Cover (Back Door)

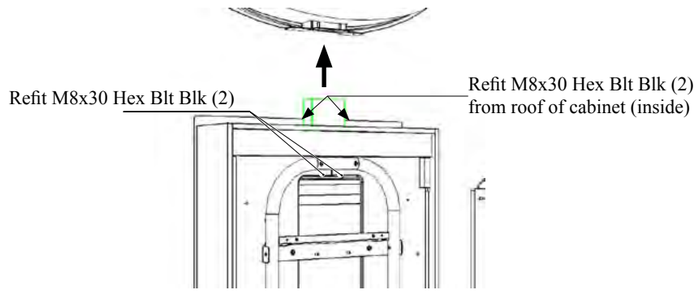


2 Remove the (4) M8x30 BLT BLK, (2) from the rear of the cabinet whilst holding onto the Billboard Bracket to prevent it from fallling, and (2) from the inside ceiling of the cabinet near the Billboard Bracket reccess.



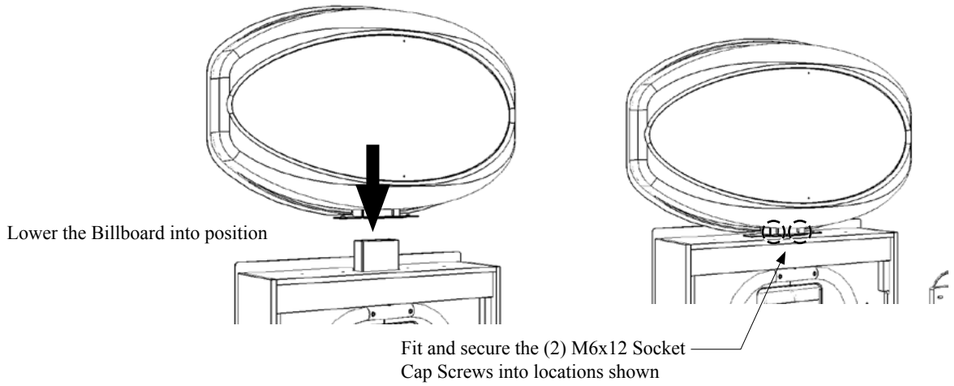
3 Lift the Billboard Bracket into postion and refix using the same fixing.

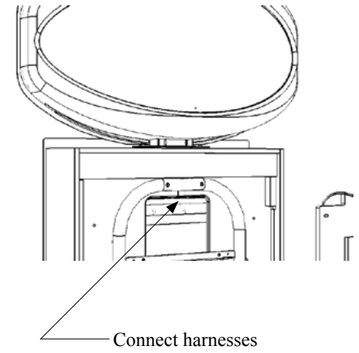




> **⚠ CAUTION**
>
> - **Billboard weighs approximately 10kg once assembled. Have at least 2 people during this operation. Working alone could result in personal injuries, etc.**
> - **To perform work safely and securely, be sure to prepare a step which is in a safe and stable condition. Performing work without using a step may lead to injury of damage to components.**

4 Using (2) people, carefully lower the Billboard (taking care not to trap wires) over the Billboard Bracket and secure into place.





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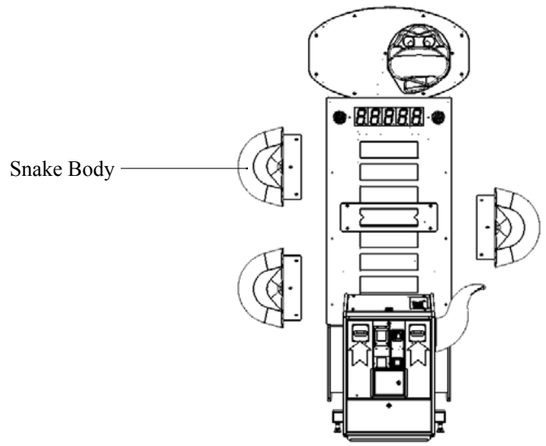
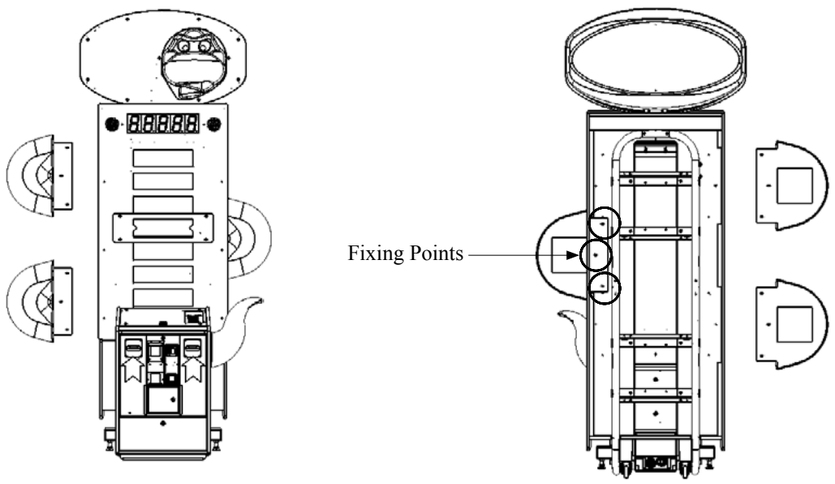
6-1-2 FITTING THE SNAKE BODY SEGMENTS

1 Remove the (6) M6x35 Hex Blt fixings from the sides of the cabinet where the Snake Body sections are to be fitted.



2 Slide each section into the designated slot and fix with (3 each) M6x35 Hex Blts removed from above instruction.



3 Once all sections have been fitted into place, make connections to each section from within the cabinet.

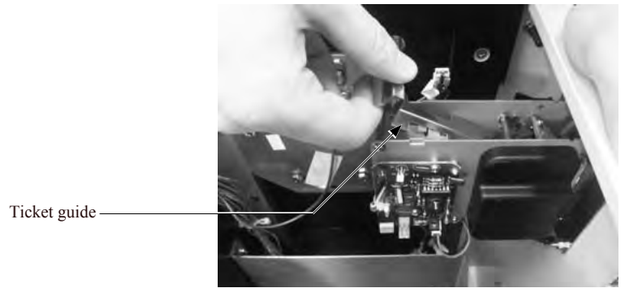
6-1-3 INSTALLING TICKETS

This game comes with (2) ticket units installed.. The purpose of these 2 units is so that the game can operate with twice the amount of tickets as a game with only a single unit. The ticket operation is such that when one unit despenses its final ticket the remainder of that win will be paid to the player via the second ticket unit. The second ticket unit will continue to operated and pay tickets to the customer until the first unit is refilled.

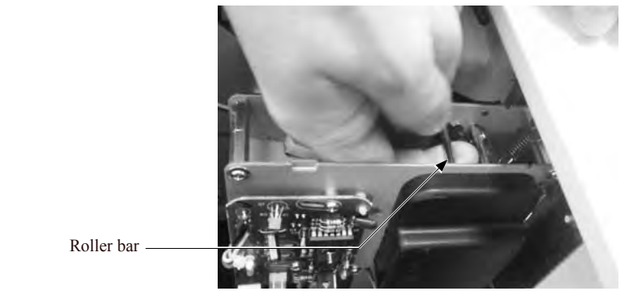
1 Ensure the machine is powered off

2 Open the Console cabinet lid to access the ticket units and ticket holders.

3 Locate the ticket unit and remove the ticket guide.



4 Using your index finger, lift the roller bar and lock it into the upper position.



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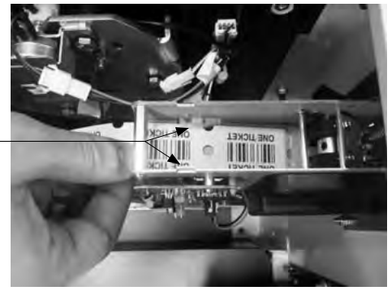
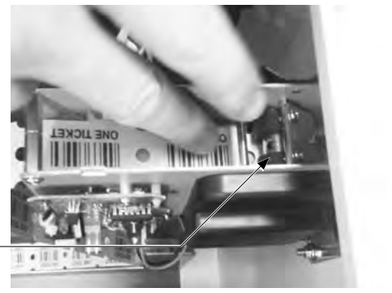
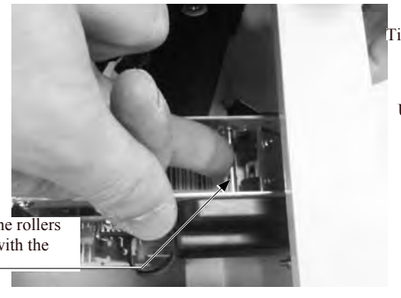
5 Feed the tickets into the ticket holder ensuring that the ticket passes through the guides.

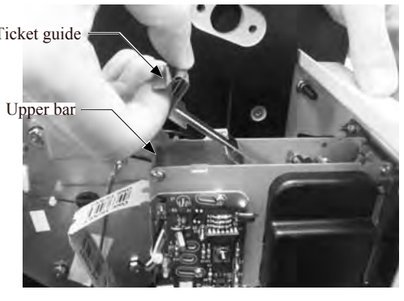


6 Feed the tickets into the ticket holder ensuring that the ticket passes underneath the ticket rollers.



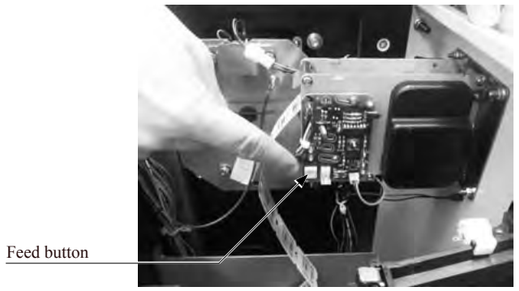
7 Lower the roller bar and refit the ticket guide, making sure that the guide locks onto the upper bar.

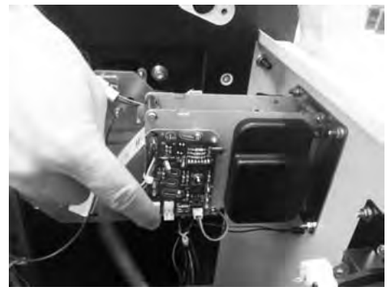




8 Apply power to the cabinet and wait for the machine to initialise.

9 Press the ticket feed button to feed a number of tickets out through the front panel checking for ticket jam in the proccess.





10 Remove any excess tickets.

Repeat the operation to install tickets into the second ticket unit..

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6-2 FIXATION TO SITE

⚠ WARNING

- **Make sure that all the adjusters contact the floor. Otherwise the cabinet could move, causing an accident.**
- **Provide a ventilation space at least 15cm wide behind the cabinet. There are ventilation holes on the back of the cabinet. Do not block the ventilation holes. Doing so could trap heat inside resulting in fire. It could also result in equipment damage or cause parts to become exhausted prematurely.**

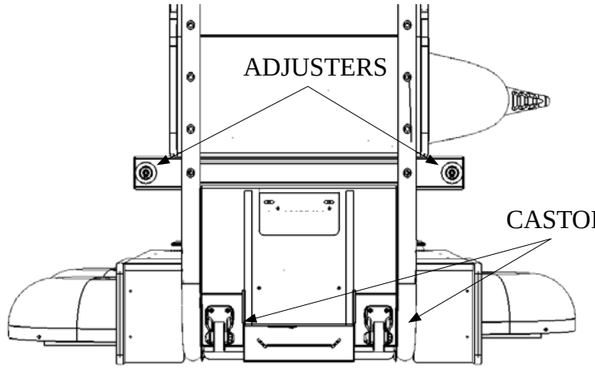
The product is equipped with 2 casters and 2 adjusters.

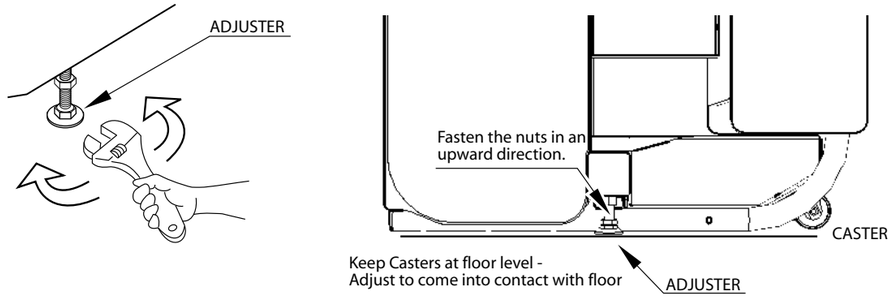
When installation position / site has been determined, have the adjusters come in direct contact with the floor. Adjust the adjusters to eliminate any movement in the cabinet.

1 Move the product to the installation site.

2 Bring the adjusters into direct contact with the floor. Use a wrench to align the height of the adjusters until the cabinet is perfectly level.

3 After setting, turn adjuster nuts upwards to tighten them and secure adjuster heights.

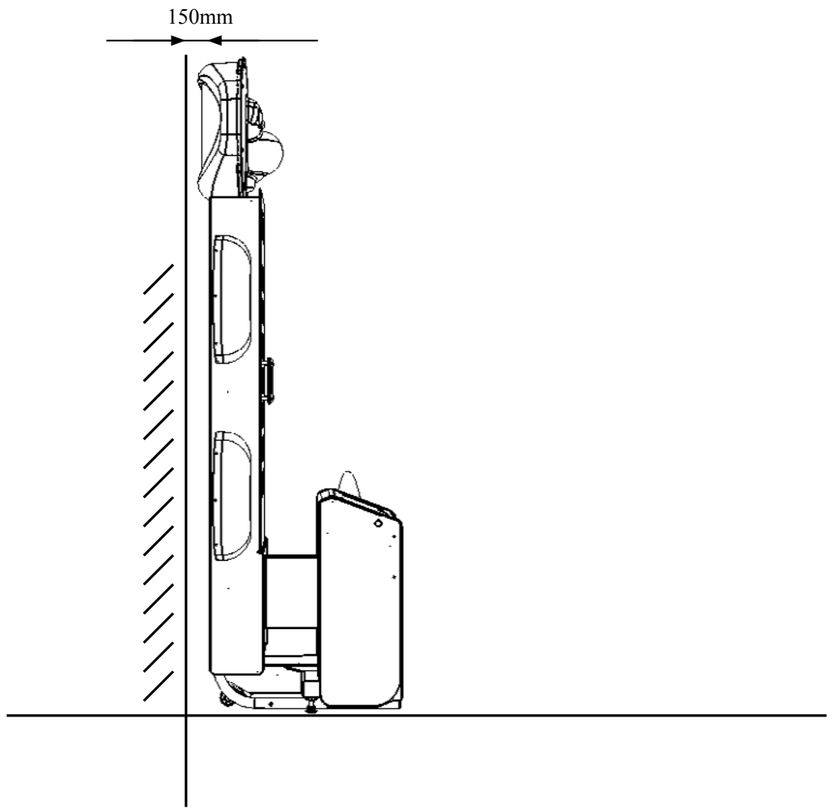




6 ASSEMBLY AND INSTALLATION

⚠ WARNING

- **Provide a ventilation space at least 15cm wide behind the cabinet. There are ventilation holes on the back of the cabinet. Do not block the ventilation holes. Doing so could trap heat inside resulting in fire. It could also result in equipment damage or cause parts to become exhausted prematurely.**



Leave a 150mm gap for ventilation

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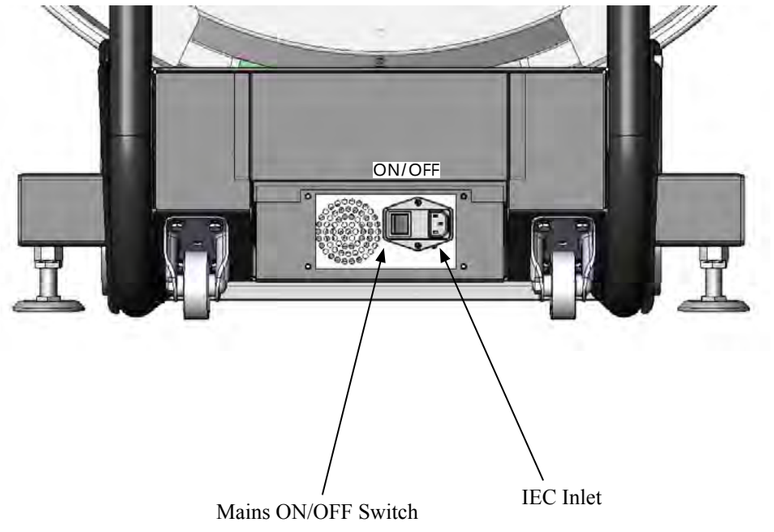
6-3 POWER SUPPLY AND OTHER CONNECTIONS

⚠ WARNING

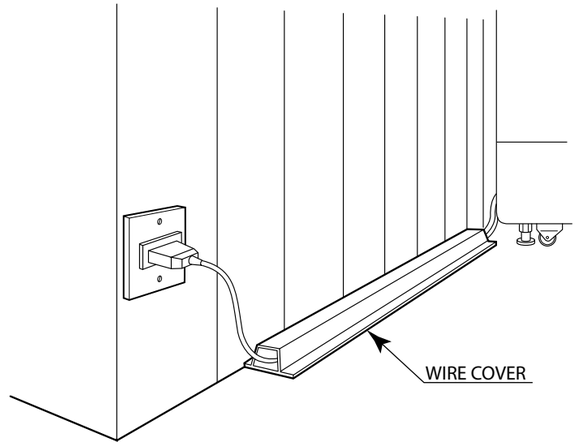
- **Use the power supply equipped with an earth leakage breaker. Use of power supply without such a breaker could result in fire if there is a current leakage.**
- **Have available a securely grounded indoor ground terminal. Without proper grounding, customers could be electrocuted and product operations might not always be stable.**
- **Do not expose the power cord or ground wire. If these are exposed, customers could stumble over them, for instance, and easily damage them. Additionally, if these lines are damaged, there could be a risk of electrical shock or short circuit. Set these lines at locations where they will not interfere with customer traffic, or attach covers to them.**
- **After laying out the power cord on the floor, be sure to always protect it. If the power cord is left exposed, it can easily be damaged, resulting in electrical shock.**

1 Confirm that the main switch is at OFF.



2 Fully insert the power cord connector on the side opposite the power plug into the AC unit IEC inlet. Insert the power cord plug into the outlet.

3 The power code is laid out indoors. Protect the power cord by attaching wire cover to it.



6-4 TURNING ON THE POWER

Set the main switch of the AC unit to ON and engage the power.

When you turn on the power, both feature wheel will spin slowly in a downward direction before comming to rest.

The lighting effects around the feature wheel and ladder will illuminate.

The Billboard light will illuminate and the feature wheel will come to a standstill.

Start up sounds are output from the speakers on the front of the cabinet.

The Game will now be playable.

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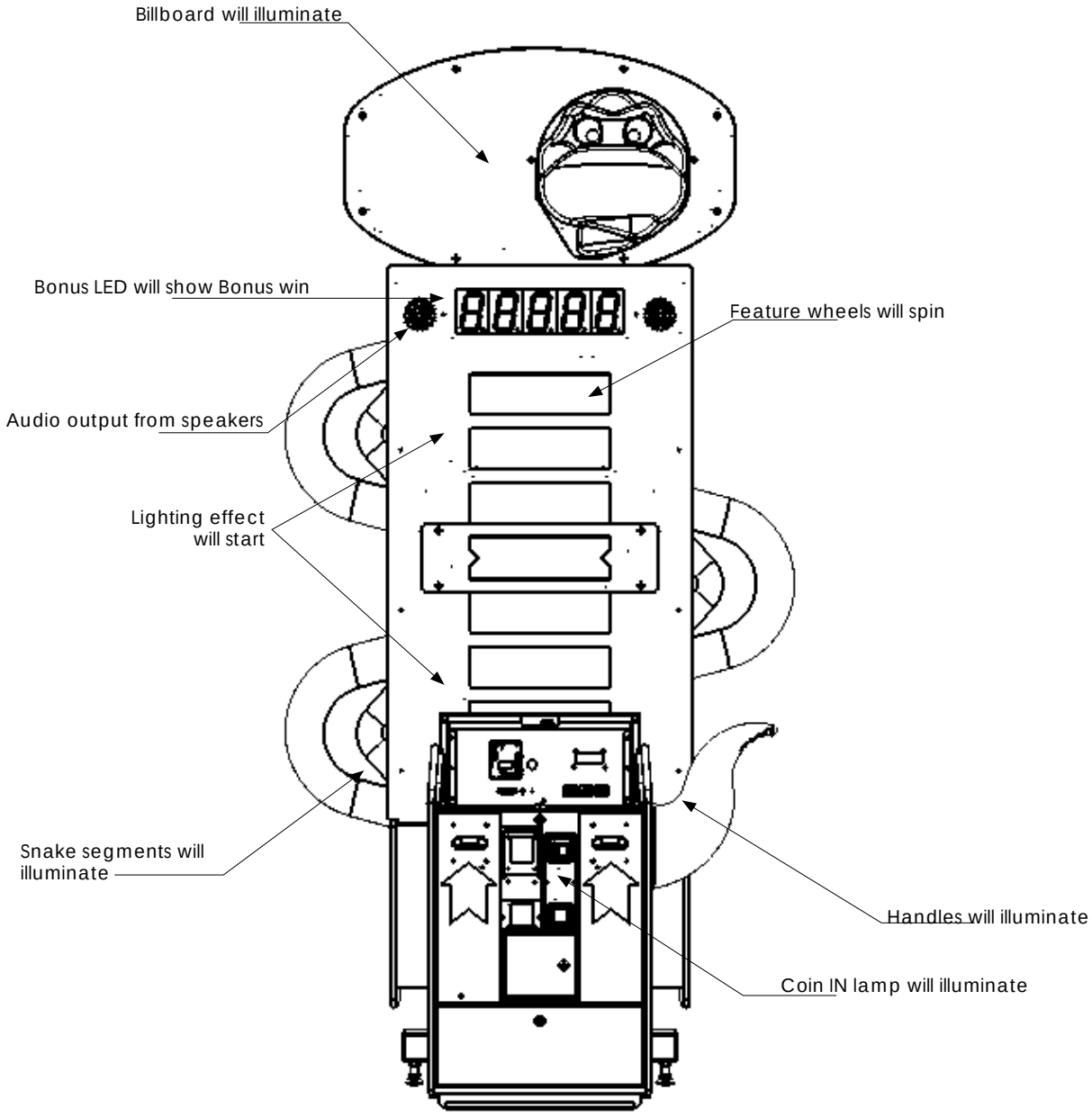
COMPONENTS WHICH CHANGE STATE WHEN POWER IS APPLIED



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7 PRECAUTIONS WHEN MOVING THE MACHINE

⚠ WARNING

- **Always disconnect the power cable before moving the product. If it is moved with the power cable connected, the cable could be damaged, causing fire or electric shock.**
- **To move the unit over the floor, pull in the adjustors and have the casters contact the floor. While moving the unit, be careful that the casters do not roll over the power cord or the ground wire. If cord or wire is damaged, there could be electrical shocks and/or short circuits.**
- **When crossing a sloped or stepped area, always have the machine travel lengthways. Travelling with the machine in a sideways position could result in the machine falling over onto its side. Always use a minimum of two people working together plus lifting apparatus to accommodate slopped areas or stairs.**
- **To lift up the cabinet, hold it at the bottom at the designated lifting points. If you hold it anywhere else, the weight of the cabinet could cause damage to parts or attachments, resulting in injury.**
- **Do not push the cabinet from the side when moving. Pushing from the side as it may result in the cabinet falling over.**

STOP IMPORTANT

- **When moving the cabinet, do not grip or push the Controllers. Doing so could deform or damage the part.**
- **If moving through a door or place with a low ceiling such as an elevator, you should take apart the billboard and billboard plate.**

Detailed instructions for removing the Assy Billboard and Billboard Plate can be found in Chapter 6 of this manual. Please follow these instruction in reverse order for removal.

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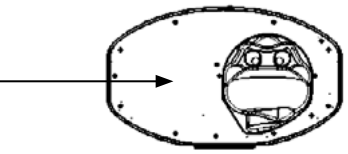
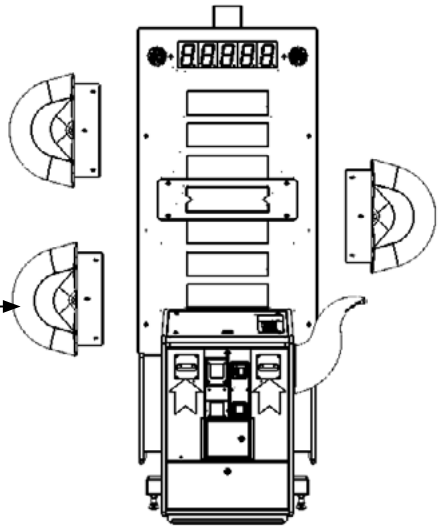
7-1 PRECAUTIONS WHEN MOVING FROM SITE

STOP IMPORTANT

• When moving the cabinet into and out of buildings, be sure to remove the Billboard Assy and the 3 snake segments. Failure to remove all these items may result in personal injury, damage to the cabinet or damage to property.

Remove the Billboard and Billboard Plate when transporting the machine in and out of buildings or when passing through areas with low ceilings.





Remove the (3) snake side segments

STOP IMPORTANT

When positioning the cabinet within the location it is possible to tilt the machine back on its casters to move over short distances. Do not attempt to move the cabinet in this manner when the Billboard is attached or atempt to move over long distances as this may damage the product or cause personel injury.

It is possible to position the cabinet within a location by tilting

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SNAKES & LADDERS GAMEPLAY

CREDIT ENTRY

Credit will only be given once sufficient coins have been inserted.

The Game will not register or otherwise acknowledge any part credits

As soon as the Credit Value changes, an AUDIO SFX is played.
Multiple credits will give repeated AUDIO SFX, although this SFX cannot be interrupted
Attract stop

If credit changes from zero, all attract lighting and audio will stop immediately

Super Win display will show current super bonus value.

The Ladder rungs will fill to the previous position achieved.

The Snakes Body will scroll from the top to the bottom and back up again.

The Control Panel 'PULL' Arrow will flash GRN. Then light each segment in turn from the top to the bottom to indicate the direction the player must pull the lever. This sequence is repeated until the player pulls the lever or the software times out (See below) and starts the game automatically.

Win-line illumination turns to OFF

Audio loop played while waiting for lever to be pulled.

LEVER PULL BACK

Credit Usage

A Credit will be deemed to be used once the Player moves the lever, or a Lever Timeout occurs (see below)

The Credit Value registered on the Credit Display will be decremented by 1 credit

Lever Pull Timeout

The player has 10 seconds in which to pull the lever.

If the lever is not pulled with the timeout period the current credit will be automatically played.

If the Lever has been pulled but not been released when the timeout period expires, the Lever will be deemed to have been released from the current position.

Lever Pull Increments

The Lever has 10 mechanical ratchet positions as it is pulled away from the cabinet.

The full mechanical travel of the Lever will be determined during calibration and will be split into 10 calibrated lever positions (for each 10% of maximum Lever travel)

As it is not possible to match ratchet clicks to the calibration data, software Lever increments may not correspond to mechanical ratchet clicks.

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LEVER RELEASE

- Release Strength

The ultimate Level Position used to determine launch speed of the feature band will be the MAXIMUM position achieved before the Lever is deemed to have been released. This means that if a Player pulls a Lever to its MAXIMUM position, then moves it to the halfway point, then releases, then the MAXIMUM position will be used

The Credit Value registered on the Credit Display will be decremented by 1 credit

Release Point
The Lever release point is considered to be when the Lever returns to within a nominal 5% of the rest position

Tracker Spin
The Tracker spin trigger point will be deemed to have started as soon as the handle is pulled. The Tracker will spin in a downwards direction.

The speed of the tracker will be determined by the amount the lever is pulled back. An audio loop will accompany the spin cycle.

The current Ladder rung position shall remain static until an increment or decrement is determined at the end of the game.

Tracker Spin Stop

The appropriate Tracker symbol resting in the Win Line remains lit while the remaining 6 are extinguished.

Once the Tracker stops the Numeric value on the Win Line will be shown on the Super Win display..

Bonus Feature

Each Tracker numeric is accompanied by either an *Up the Ladder* overlay (printed to the left or right hand side of the numeric) symbol or a *Down The Ladder* overlay (printed to the right hand side of the numeric) symbol.

If the bonus symbol is *Up the Ladder*, the next rung up is awarded / lit and the corresponding S U P E R W I N letter is lit. This is accompanied by and audio sting.

The newly awarded rung plus the corresponding S U P E R W I N letter will flash. All rungs below remain statically lit.

Once the new rung position is awarded the TICKET WIN is paid out. The Value of the win is displayed on the SUPER WIN display and counts down as the tickets are dispensed.

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9 EXPLANATION OF TEST AND DATA DISPLAY

Perform tests and data checks periodically by manipulating the TEST Button and SERVICE Button in the cabinet. Follow the instructions in this chapter to conduct checks when the game machine is first installed, when money is being collected, or when the game machine does not operate properly.

Shown overleaf are the tests and screens to be used for different problems.

IMPORTANT

- **The details of changes to test mode settings are saved when you exit from TEST MODE by selecting EXIT from the system test mode menu. Be careful because if the power is turned off before that point, changes to the settings will be lost.**
- **Use with the specified settings. If settings other than those specified are used, inappropriate operations or malfunction may occur.**

IMPORTANT

- **Adjust the sound to the optimum volume, taking into consideration the environmental requirements of the installation location.**

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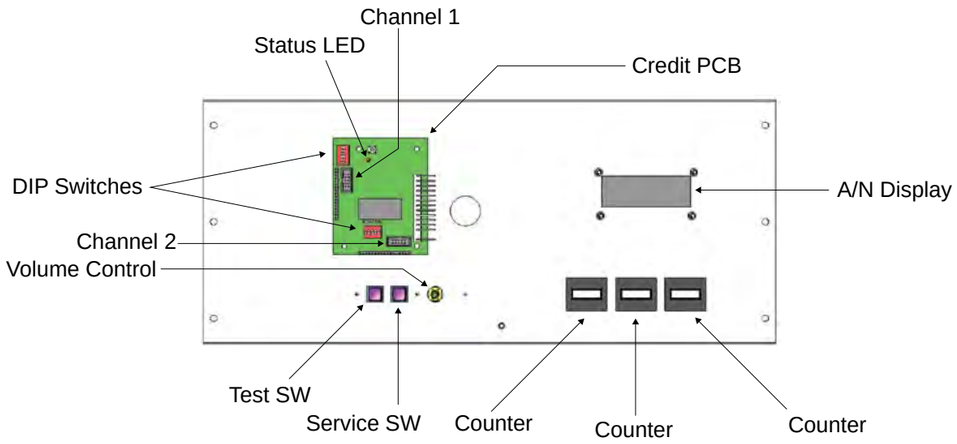
9-1 SWITCH UNIT AND COIN METER.

The SWITCH UNIT and COUNTERS are housed within the COINTOWER. To access these controls you will need to open the COIN door, the switches and counters can be found directly on the rear face of the Tower.



DEVICE	FUNCTION
TEST BUTTON	Press to enter TEST MODE - Also used to enter choices selected within TEST MODE
SERVICE BUTTON	Press for SERVICE CREDIT - Also used to scroll through TEST MENUs
COIN IN COUNTER	Counts inserted coins (£0.10 or $0.10 = 1 count)
VOLUME CONTROL	Adjusts audio level

9-2 TEST MENU

IMPORTANT

The details of changes to Test Mode settings are saved when you exit from each Test Mode by selecting EXIT. Be careful because if the power is turned off before that point, changes to the settings will be lost.

SYSTEM TEST MODE can be used to check the information or the operation of UNCOCH (RedOne), adjust Gameplay settings, and perform coin/credit settings.

1 Press the TEST Button after powering on the unit to display the following TEST MENU.

For further details, see the UNCOCH (RedOne) section in this service manual.

TEST MODE

Factory default settings are in BOLD
configuration and coin configuration changes can be made within TEST MODE.

TEST MENU

Press the TEST button to open the TEST MENU.

The following options are available from the TEST MENU.

SYSTEM INFO	General Information and version numbers for software and hardware.
LIGHTING TEST	Test functions for the lighting of the cabinet
DISPLAY TEST	Test functions for the 7 segment LED and Starburst displays
INPUT TEST	Test functions for switches, buttons, levers, ticket opto, and coin lines
OUTPUT TEST	Test functions for ticket vend and coin and ticket meters
CALIBRATION	Calibration functions for Lever Pull and Wheels
AUDIO SETTING	Set volume levels for attract and in game audio
GAME SETTINGS	Set Game mode, price of play, ticket value and percentage payout
BOOKKEEPING	View game and ticket data and clear bookkeeping
SET DATE/TIME	Set date and time
EXIT	Exit the Test Menu to return to the game

Press the SERVICE button to move to the next Test menu option.
Press TEST button to enter the selected item.

The text TEST MODE will be displayed on LINE 1 of the 2x16 LCD screen. The current Test Function will be displayed on LINE 2 of the screen. For Example:

```
TEST MENU
1.SYSTEM INFO
```

SYSTEM INFORMATION

Select SYSTEM INFO from the TEST MENU to display the SYSTEM INFORMATION menu.

```
TEST MENU
1.SYSTEM INFO
```

The SYSTEM INFORMATION test displays general information and version numbers for system hardware and software.

Game Name and Version Info

```
Snakes & Ladders
v0.1.0070
```

Hardware and Serial Info

```
BOOTLOADER=v1.0
SERIAL#=0101fe04
```

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LIGHTING TEST

Select LIGHTING TEST from the TEST MENU to display the LIGHTING TEST menu.

```
TEST MENU
2.LIGHTING TEST
```

The LIGHTING TEST is used to test the functionality of the lights on the cabinet.
To implement the test, select a lighting test and press the Test button to turn on/off or cycle through the light(s).

ALL LEDS This will turn all lighting features for the cabinet on/off.

```
LIGHTING TEST
ALL LEDS
```

Pressing the TEST button will turn all LEDs on.

```
ALL LEDS
ON
```

Press the SERVICE button to stop the test and return to LIGHTING TEST menu.

LED STEP DIRECT This will test the individual LEDs of the Ladder Assy and Rolling Road Assy.

```
LIGHTING TEST
LED STEP DIRECT
```

Pressing the TEST button will cycle through the colours.

```
LED STEP DIRECT
DIR:000 WHITE
```

Press the SERVICE button to stop the test and return to the LIGHTING TEST menu.

LED STEP MUX This test will cycle through (in order) the LEDs on the Snakes Body. These lights are used to illuminate the snakes body.

```
LIGHTING TEST
LED STEP MUX
```

Pressing the TEST button will cycle clockwise around the top wheel followed by the bottom wheel.

Press the SERVICE button to stop the test and return to the LIGHTING TEST menu.

LED STEP SERIAL This test will cycle through (in order) the LEDs on the control panel and win line.

```
LIGHTING TEST
LED STEP SERIAL
```

Press the SERVICE button to stop the test and return to the LIGHTING TEST menu.

EXIT LED TEST Press the TEST button to exit LIGHTING TEST and return to the TEST MENU.

DISPLAY TEST

Select DISPLAY TEST from the TEST MENU to display the DISPLAY TEST menu.

```
TEST MENU
3.DISPLAY TEST
```

The DISPLAY TEST is used to test the numeric displays. The first display is on the control panel and is used to show credits available. The second is at the top of the ladder and this shows wheel values and total tickets won.

ALL SEGMENTS This will test both the display in the ladder and on the control panel.

```
DISPLAY TEST
ALL SEGMENTS
```

INDENTIFY This will output 01 on control display and 234567 on the ladder display.

```
IDENTIFY
CR=01 SB=23456
```

SEGMENT STEP This will test each of the 7 segments and decimal place in sequence for both displays.

```
SEGMENT STEP
SEGMENT=A
```

EXIT DISPLAY TEST Press the TEST button to exit DISPLAY TEST and return to the TEST MENU.

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INPUT TEST

Select INPUT TEST from the TEST MENU to display the INPUT TEST menu.

```
TEST MENU
4.INPUT TEST
```

The INPUT TEST contains test functions for the cabinet input devices, such as switches, buttons and levers.

LEVER INPUTS This test shows the input signals for the lever. Moving the lever will display the current input signal.

```
LEVER  0000
```

SWITCH INPUTS This test shows the current status of all SWITCH BANK1 positions.
0 indicates a switch is OFF
1 indicates a switch is ON
Also displayed is the current status of the TEST and SERVICE buttons.
Pressing the TEST or SERVICE buttons will change the status to ON.

```
DIL SW1-6 001000
TST OFF  SRV OFF
```

PLEASE NOTE: To exit this test you must press and both TEST and SERVICE together.

OPTO INPUTS This test shows the current status of the track and ticket opto switches. When activated the status will change to ON.

```
TOP  ON TKTL  ON
BOT  ON TKTR  ON
```

EXIT INPUT TEST Press the TEST button to exit INPUT TEST and return to the TEST MENU.

OUTPUT TEST

Select OUTPUT TEST from the TEST MENU to display the OUTPUT TEST menu.

```
TEST MENU
5.OUTPUT TEST
```

This test is used to check all configured outputs from the IO board. This includes physical meters, ticket vends and stepper motor.

METER OUTPUTS This test will send a pulse to the game and ticket meters and increase their values by 1 unit. There is a test for each meter, press the SERVICE button to select which meter to test and press the TEST button to initiate.

```
METER OUTPUTS
TEST GAME METER
```

```
METER OUTPUTS
TEST TICKET METER
```

Select EXIT to return to the OUTPUT TEST menu.

TICKET OUTPUTS This will test the ticket vend, use the SERVICE button to select either the left or right ticket vend and press TEST to vend a single ticket.

```
TICKET OUTPUTS
LEFT  TKT VEND
```

A message will be displayed on completion of the test.

```
TICKET OUTPUTS
VEND OK
```

Select EXIT to return to the OUTPUT TEST menu.

MOTOR OUTPUTS This will test the motor for the track. Press TEST button to select Track and initiate test.

```
MOTOR OUTPUTS
TEST TRACK
```

After selecting the track to test the screen will display the message TRACK SPINNING. During this test the TEST and SERVICE buttons are disabled and you must wait for the test to complete before making another selection. It is not possible to cancel the test.

```
MOTOR OUTPUTS
TRACK MOVING
```

Select EXIT to return to the OUTPUT TEST menu.

EXIT Press the TEST button to exit OUTPUT TEST and return to the TEST MENU.

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CALIBRATION

Select CALIBRATION from the TEST MENU to display the CALIBRATION menu.

```
TEST MENU
6.CALIBRATION
```

This test is used to calibrate the lever and set the offset level for the track.

CALIBRATE LEVER This test will allow for the lever to be calibrated and ensure reliable game play.

```
CALIBRATION
CALIBRATE LEVER
```

When first selecting CALIBRATE LEVER an instruction will be displayed, PLEASE WAIT, during this time the levers are being unlocked.
The next step requires the lever to be pulled and held at it's lowest position.

```
CALIBRATION
PULL BOTH LEVERS
```

Wait until instructed to release the levers. When the calibration is complete the message DONE! is displayed.

```
CALIBRATION
DONE!
```

SET TRACK OFFSET

EXIT CALIBRATION Press the TEST button to exit CALIBRATION and return to the TEST MENU.

AUDIO SETTINGS

Select AUDIO SETTINGS from the TEST MENU to display the AUDIO SETTINGS menu.

```
TEST MENU
7.AUDIO SETTINGS
```

This test is used to turn on/off the sound during attract, when the game has zero credit, and test the speakers performance.

AUDIO IN ATTRACT This will turn on/off sound during attract.

```
AUDIO SETTINGS
AUDIO IN ATTRACT
```

Pressing the TEST button will turn sound during attract on/off

```
AUDIO IN ATTRACT
SETTING:  ON
```


Press the SERVICE button to return to the AUDIO SETTINGS menu.

AUDIO PLAY TEST This will play sample music to test that the speakers are working.

```
AUDIO SETTINGS
AUDIO PLAY TEST
```

Pressing the TEST button will turn the sample music on

```
AUDIO PLAY TEST
SETTING:  ON
```

Press the SERVICE button to stop the test and return to AUDIO SETTINGS menu.

EXIT AUDIO TEST Press the TEST button to exit AUDIO SETTINGS and return to the TEST MENU.

GAME SETTINGS

Select GAME SETTINGS from the Test Menu screen to display the GAME SETTINGS menu.

```
TEST MENU
8.GAME SETTINGS
```

This test is used to change percentage payout, cost of play, ticket values and Super Bonus settings.

This menu is set out differently to previous menus. When entering GAME SETTINGS the option to
change settings is display immediately.
To change the values press the TEST button.
To move to the next option press the SERVICE button.

SET PAY %AGE Options available: 20% to 80% (5% increments)

```
SET PAY %AGE
SETTING: 30%
```

SET COST OF PLAY Options available: 0.20, 0.25, 0.50, 1.00 and 2.00

```
SET COST OF PLAY
SETTING: 1.00
```

SET TICKET VALUE Options available: 0.01 to 0.10 (0.01 increments)

```
SET TICKET VALUE
SETTING: 0.01
```

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SUPERBONUS TYPE Options available: FIXED and INCRMNT

FIXED – The value is fixed at the value set in SUPERBONUS MAX
INCRMNT – The Super bonus value will increment each game by the value specified in SUPERBONUS INC, up to the value specified in SUPERBONUS MAX.

```
SUPERBONUS TYPE
SETTING: FIXED
```

SUPERBONUS MAX Options available: 100 to 1000 (100 increments) 2000, 5000 and 9999

```
SUPERBONUS MAX
SETTING: 1000
```

This is the maximum value the Super Bonus will reach in any game type.

SUPERBONUS START Options available: 0, 10, 50, 100, 200, 500

```
SUPERBONUS START
SETTING: 100
```

Only used when the SUPERBONUS TYPE is set to INCRMNT. This value is the starting value of the Super Bonus.
PLEASE NOTE: SUPERBONUS START cannot be higher than SUPERBONUS MAX.

SUPERBONUS INC Options available: 0.1, 0.25, 0.5, 1, 2, 3, 4, 5, 10

```
SUPERBONUS INC
SETTING:  1
```

Only used when the SUPERBONUS TYPE is set to INCRMNT. This is the value Super Bonus increments after each game.

SUPERBONUS FREQ Options available: LOW, NORMAL and HIGH

```
SUPERBONUS FREQ
SETTING: NORMAL
```

This function modifies the Super Bonus drop frequency by allocating more tickets to the Super Bonus each game.

EXIT SETTINGS Press the TEST button to exit GAME SETTINGS and return to the TEST MENU.

BOOKKEEPING

Select BOOKKEEPING from the Test Mode to display the BOOKKEEPING menu.

```
TEST MENU
9.BOOKKEEPING
```


This test is used to review statistical data from the system, and also clear all bookkeeping, tickets owed and unused service credits.

Press the SERVICE button to view the next BOOKKEEPING screen.

SCREEN 1
CREDITS Total number of COIN credits entered
SERVICE Total number of SERVICE credits entered

```
CREDITS =0000050
SERVICE =0000001
```

SCREEN 2
GAMES Total number of games played
TICKETS Total number of tickets paid out

```
GAMES   =0000051
TICKETS =0001530
```

SCREEN 3
AIM PC Aiming percentage payout set in GAME SETTINGS
ACTUAL PC Actual percentage payout achieved by the cabinet

```
AIM PC   = 30%
ACTUAL PC= 30%
```

SCREEN 4
TRK TKT Total number of tickets paid out from the track
SBNS TKT Total number of tickets paid out by winning Super Bonus

```
TRK TKT =0000530
SBNS TKT=0001000
```

SCREEN 5
AVRG TKT Average amount of tickets paid out per game
BONUS 1 in The drop frequency of the Super Bonus in games

```
AVRG  TKT=000030
BONUS 1 in    50
```

SCREEN 6
MTR HRS

```
MTR HRS =000001
```

CLEAR METERS This option allows you to clear all bookkeeping data.
WARNING – ONCE DELETED THIS INFORMATION CAN NOT BE RESTORED

```
CLEAR METERS
```

Press the TEST button to show the clear message.

```
CLEAR METERS
ARE YOU SURE? Y
```

Press the SERVICE button to change between N and Y.
Press the TEST button to confirm your selection.

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CLEAR IOU This option allows you to clear any tickets that have not been paid out.
WARNING – ONCE DELETED THIS INFORMATION CAN NOT BE RESTORED

```
CLEAR IOU
```

Press the TEST button to show the clear message.

```
CLEAR IOU
ARE YOU SURE? Y
```

Press the SERVICE button to change between N and Y.
Press the TEST button to confirm your selection.

CLEAR SRV CREDIT This option allows you to clear any unused service credits .
WARNING – ONCE DELETED THIS INFORMATION CAN NOT BE RESTORED

```
CLEAR SRV CREDIT
```

Press the TEST button to show the clear message.

```
CLEAR SRV CREDIT
ARE YOU SURE? Y
```

Press the SERVICE button to change between N and Y.
Press the TEST button to confirm your selection.

EXIT Press the TEST button to exit BOOKKEEPING and return to the TEST MENU.

SET DATE/TIME

Select SET DATE/TIME from the Test Menu screen to enter the SET DATE/TIME menu.

```
TEST MENU
10.SET DATE/TIME
```

This screen is used to set the time and date of the system. The current date and time setting for the system is always displayed at the top of the screen. Below allows for each setting to be adjusted.

Use the SERVICE button to change between the different options.
Use the TEST button to increase the setting value by 1.

ADJUST DATE This will change the date of the month.
Range between 1 and 28, 29, 30 or 31 depending on month and year.

```
24/03/13  15:05
ADJUST DATE
```


ADJUST MONTH This will change the month.
Range between 1 and 12

```
24/03/13  15:05
ADJUST MONTH
```

ADJUST YEAR This will change the year.
Range between 01 and 99

```
24/03/13  15:05
ADJUST YEAR
```

ADJUST HOURS This will change the hour.
Range between 00 and 23

```
24/03/13  15:05
ADJUST HOUR
```

ADJUST HOURS This will change the minutes.
Range between 00 and 59

```
24/03/13  15:05
ADJUST MINUTES
```

EXIT Press the TEST button to exit SET DATE/TIME and return to the TEST MENU.

EXIT

Select EXIT from the Test Menu screen to exit from the TEST MENU and return to the game .

```
TEST MENU
11.EXIT
```

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10 CONTROLLER UNIT(S)

⚠WARNING

- **When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.**
- **Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.**
- **Exercise due caution in performing soldering work. If soldering iron is handled carelessly, there could be fires or burns.**

⚠CAUTION

- **When fastening plastic parts, be careful not to tighten screws or nuts excessively. If these are tightened to excess, parts could be damaged, resulting in injuries from fragments, etc.**
- **After the unit has been disassembled and reassembled again, check carefully that the unit has been reassembled correctly.**
- **Be sure to inspect the outer elements on both controller units.**
- **Ressemble so that there is no gap between plates and covers. If there is a gap or rattling, the players could get fingers or hands caught, resulting in injury.**

STOP IMPORTANT

- **Be careful not to damage or lose small parts or screws.**
- **When a part has been replaced, be sure to always make adjustments and check conditions in Test Mode.**

STOP IMPORTANT

Be sure to remove the power before attempting service or repair to the controller. Failure to remove power may result in component damage or shock hazzard.

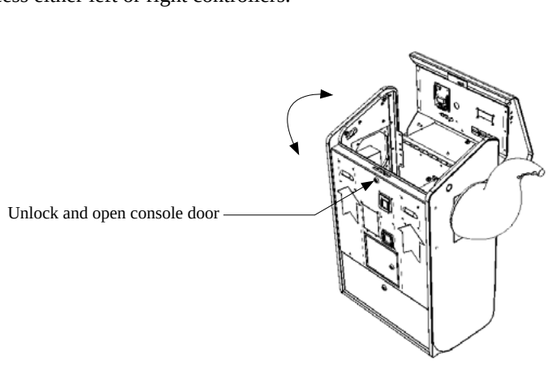
In cases where the Handle operability is poor and/or the adjustment or replacement of the POT is required. It may be nescessary to replace either the COIL or the POT from within the controller depending on the fault condition.
In game, when the handle is pulled fully along its path the gage around the outside of the upper disc should indicate a MAX spin. If this is not the case then it is possile that the POT within the controler may need to be adjusted or replaced. Carefully follow the instructions below to carry out this operation.

10-1 AJUSTING/CHANGING THE POT

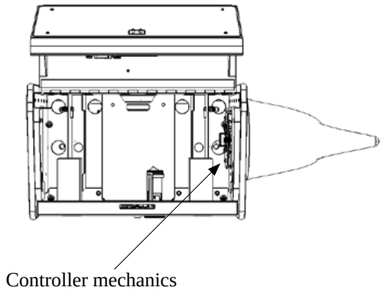
An adjutable wrench is required for the following procedure.

1 Turn off the power.

2 Using the key - open the Console lid to access either left or right controllers.



3 Locate the machanics of the controller. Take care when working in this area. DO NOT pull on the handle when working on the controller. Keep fingers away from moving parts at all times.



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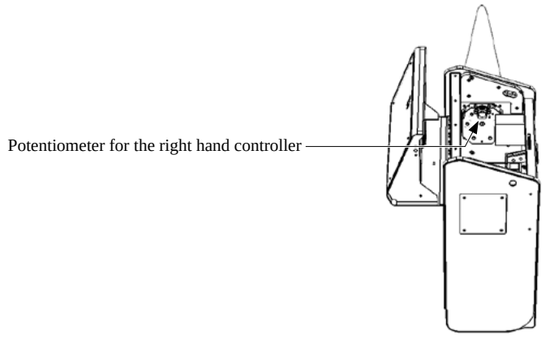
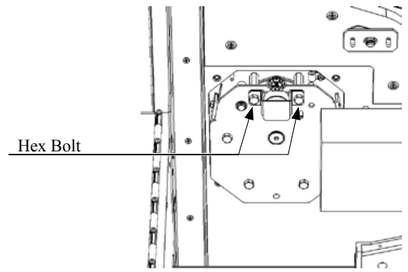
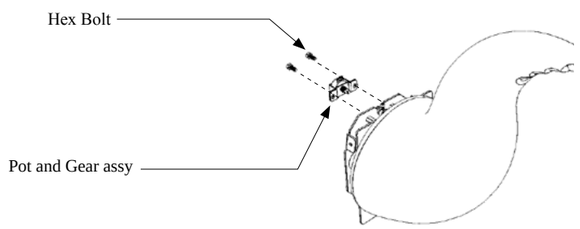
4 Locate the potentiometer.



5 Locate and remove the (2) Hex Bolts which secure the Potentiometer Bkt to the controller mech.



6 Carefully remove the potentiometer and brkt taking care not to damage any wires..



REPLACEMENT PROCEDURE

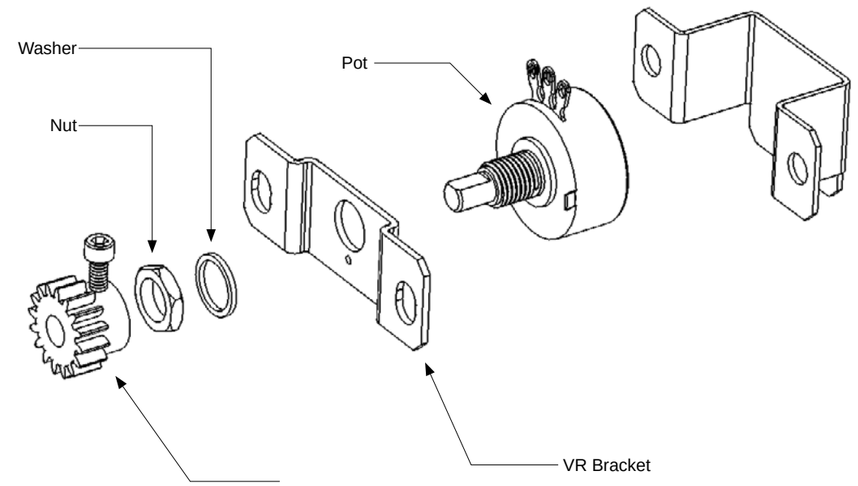
This procedure requires the following tools: Phillips screwdriver for the M4 screws, 1.5 mm hexagonal wrench, 11-12 mm monkey wrench, nipper, cutter, wire stripper, soldering iron, industrial dryer and heat-shrinkable tube.

1 Using a soldering iron - desolder the 3 wires which are connected to the pot. Make note of the position of the wires before desoldering.

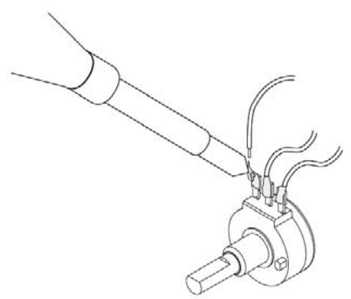
2 Slacken off the Gear retaining screw and pull the gear off the stem of the potentiometer.

3 Remove the nut securing the VR Bracket, then separate the Volume from the VR Bracket and replace it.

4 Remove the nut securing the VR Bracket, then separate the Volume from the VR Bracket and replace it.



5 Fit individual pieces of heat shrinkable tubing over the inulation of the (3) wires and solder them into place in the same formation as when removed. When cool, place the tubing over each solder joint and heat to shrink inplace.



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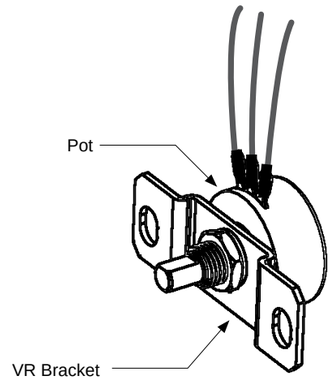
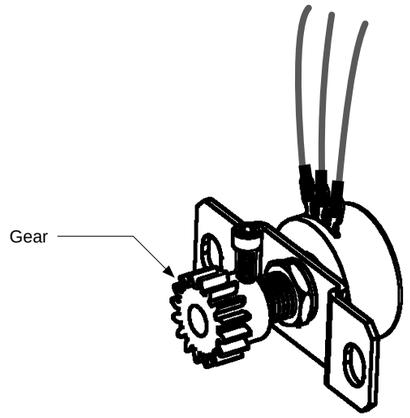
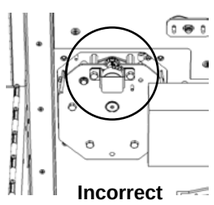
6 Refit the pot to the VR bracket keeping the pot in the same orientation as when initially removed.

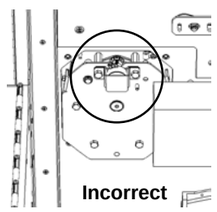


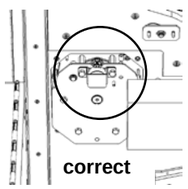
7 Fit the Gear to the pot shaft taking care not to overtighted the fixing as this could damage the thread inside the gear.



8 Manually center the pot and reposition it back into the controller mecha and secure.





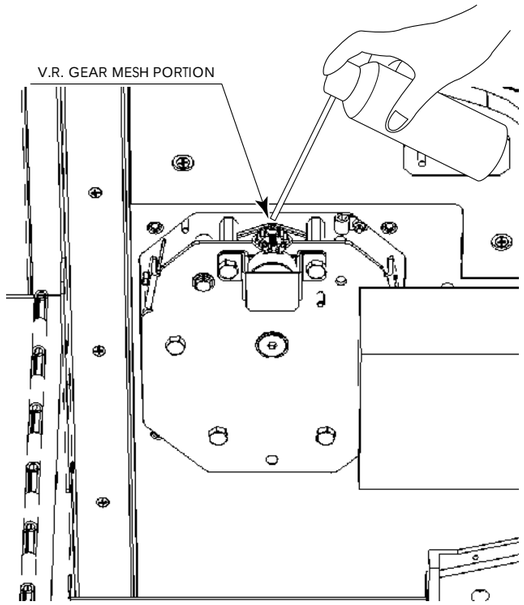


10-2 GREASING

STOP IMPORTANT

- **Be sure to use the designated grease. Using undesignated grease can cause parts damage.**
- **Do not apply grease to locations other than as specified. Doing so may create a risk of operational problems and deterioration of parts.**
- **The designated periods for greasing serve only as a guide. Whenever there are squeaks or other anomalies, apply grease at designated locations.**

Use spray grease once every three months to grease up the gear mesh portion of the constituent parts.
Use "Grease Mate" (part number 090-0066) for the spray grease.



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11 FEATURE REEL / TRACKER

The main feature of this game is the feature reel or tracker.
Each time a handle is pulled, the cfeature reel will revolve at a speed chosen by the player when pulling down on the handle. The speed of the reel is determined using the gauge on the Control Panel. When a player pulls down on the handle the gauge increases accordingly. The further a handle is pulled down the faster/longer the reel will spin.

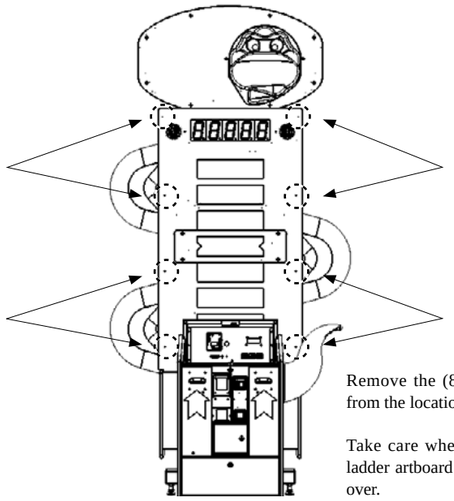
For information of replacing the LED's within the feature reel please refer to Chapter 13 - Lamps and Lighting in this manual.

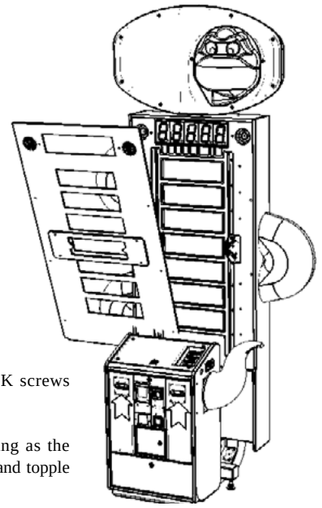
11-1 CHANGING THE TRACKER / REEL BAND

The Game is presented in three formats, a £2/€2/$2 game a £1/€1/$1 game and a 50p/50c/50¢ game. The denomination of the game is determined by the feature band. By default the games are shipped from the maunfacturers with the £1/€1/$1 band fitted. The £2/€2/$2 and 50p/50c/50¢ bands are both supplied in the installation kit box alongside this manual and the billboard.

1 Remove the power from the cabinet and disconnect the power lead.

2 Remove the Ladder Artboard buy unscrewing the (8) M4x30 MSCR PH BLK from the outer edges.

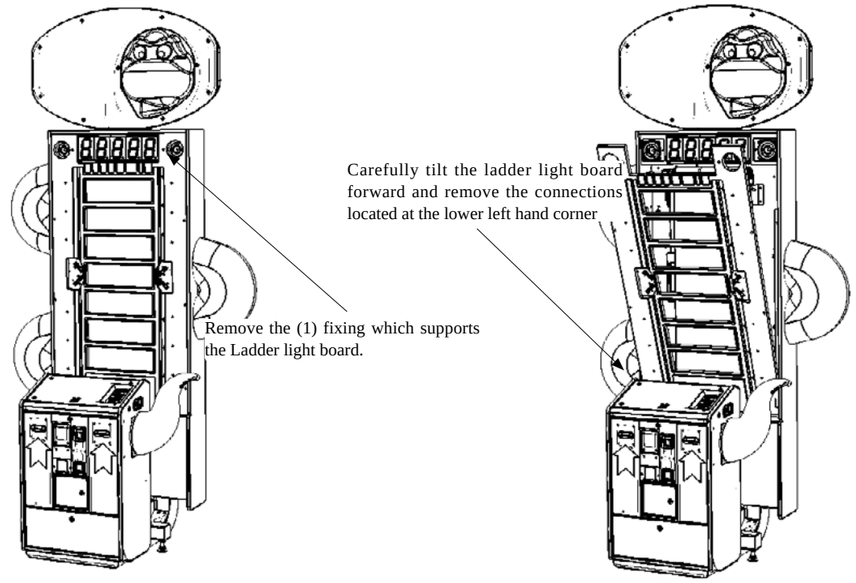




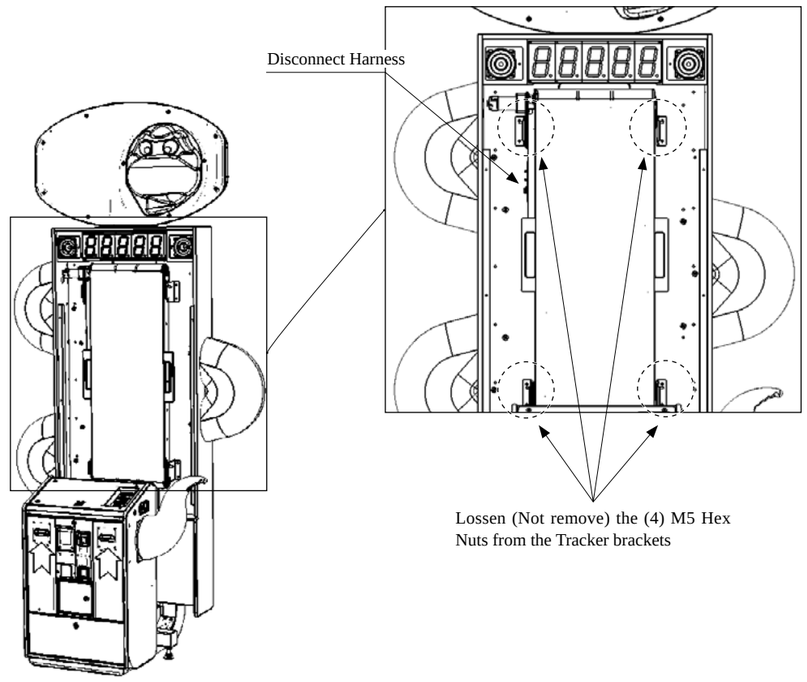
Remove the (8) M4X30 MSCR PH BLK screws from the locations shown.

Take care when removing the final fixing as the ladder artboard may become unbalanced and topple over.

3 Remove the Ladder light board - Unscrew the single fixing which supports the ladder light board. Carefully tilt the board towards you and rest it on the Console cabinet. Disconnect the harnesses to the ladder light board located at the lower left hand corner. Lift out the board and place it carefully to one side.



4 Removing the Tracker/Reel Band - Locate the (4) M5 Hex nuts positioned at each corner of the Tracker assembly and lossen. Locate and disconnect the Tracker harness.



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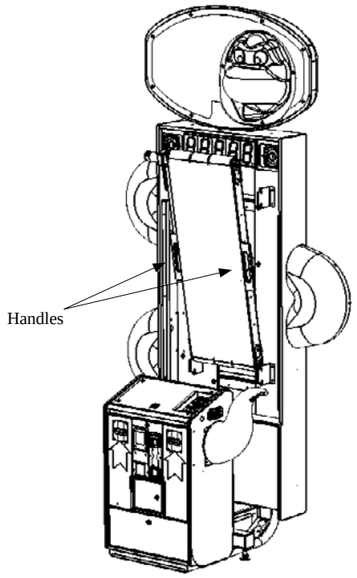
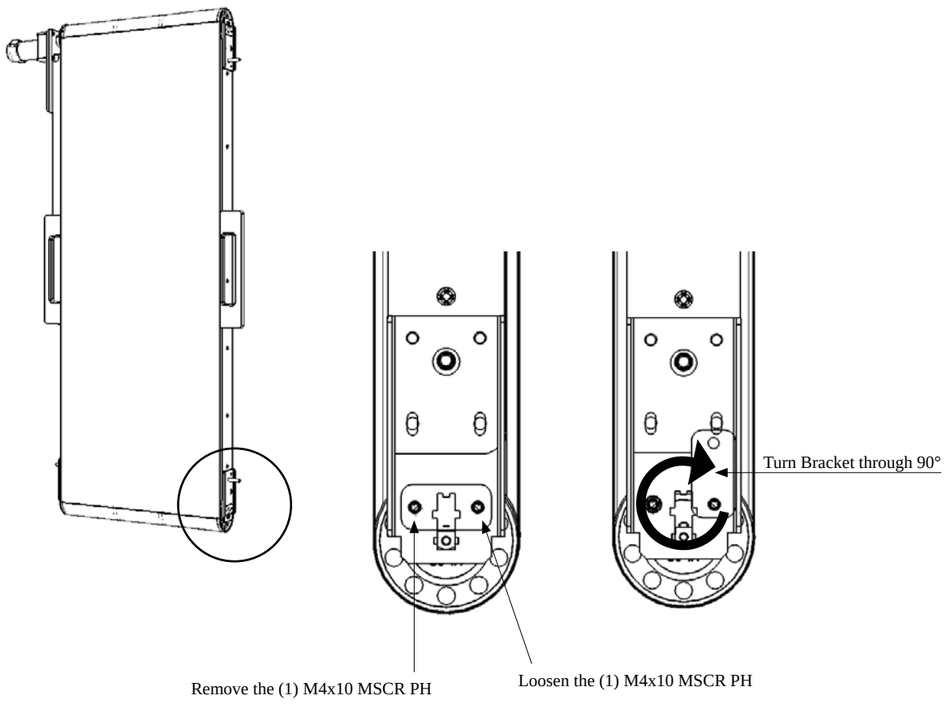
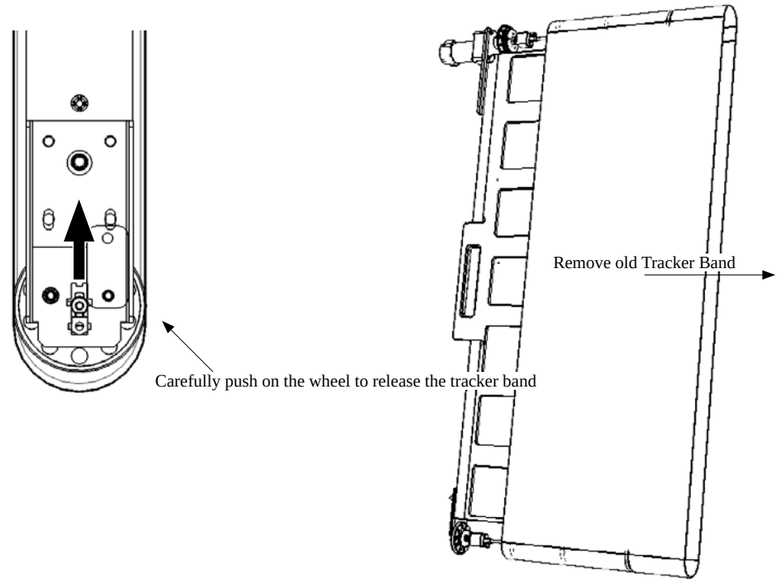
5 Once all harnesses are disconnected carefully hold the Tracker unit by the handles and lift to remove.



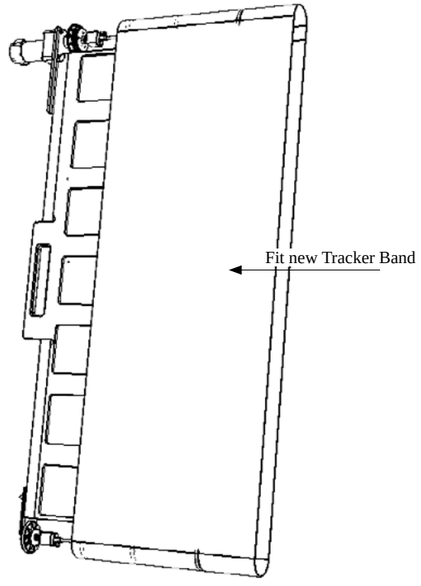
6 To remove the band - lossen the tension from the band by rotating the tension bracket through 90 degrees. This will enable the unit to compress slightly so that the band can be removed.



7 Once the Tracker tension bracket has been repositioned, carefully push on the wheel to release the band.



8 Fit the NEW band onto the Tracker Unit in the same way by following these instructions in reverse order



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12 COIN HANDLING

Handling the Coin Jam

If the coin is not rejected when the REJECT button is pressed, open the coin chute door and open the selector gate. After removing the jammed coin, put a normal coin in and check to see that the selector correctly functions.

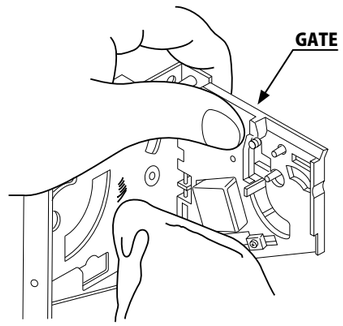
12-1 CLEANING THE COIN SELECTOR

IMPORTANT

- **Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.**
- **Never apply machine oil, etc. to the Coin Selector.**
- **After cleaning the Coin Selector, insert a regular coin in the normal working status and ensure that the selector correctly functions.**

The Coin Selector should be cleaned once every 3 months.
When cleaning, follow the procedure below:

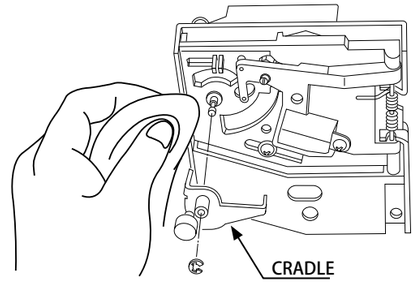
1. Turn the power for the machine OFF. Open the Coin Chute Door
2. Remove the Coin Selector from the Coin Chute Door
3. Open the gate and dust off by using a soft brush (Small soft Paint Brush, etc.)



12-1 FIG 1

CLEANING THE COIN SELECTOR (MECHANICAL).

1. Remove and clean smears by using a soft cloth dipped in water or diluted chemical detergent and then squeezed dry.
2. Remove the CRADLE.. When removing the retaining ring (E ring) be very careful so as not to bend the rotary shaft.
3. Remove stain from the rotary shaft and shaft receiving portions by wiping off with a soft cloth. etc.



12-1 FIG 2

4. After wiping off as per previous step, further apply a dry cloth to completely dry the Coin Selector.

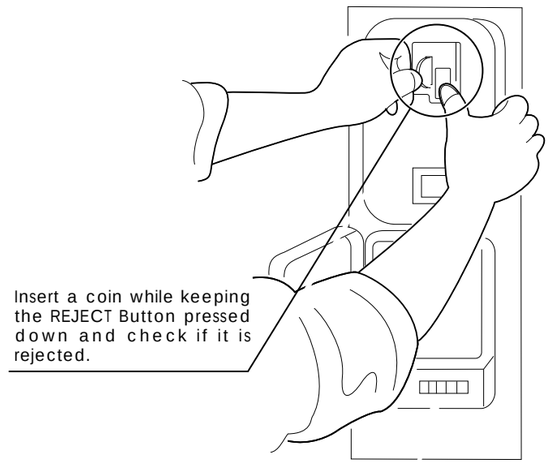
Coin Insertion Test

Once every month, when performing the Coin SW Test, simultaneously check the following:

Does the Coin Meter count satisfactorily?

Does the coin drop into the cashbox correctly?

Is the coin rejected when inserted while keeping the REJECT Button pressed down?



12-1 FIG 3

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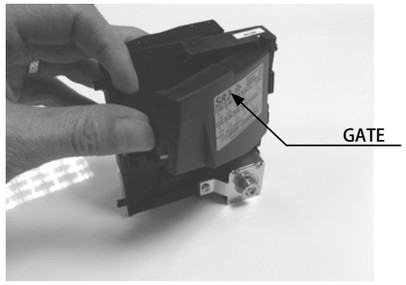
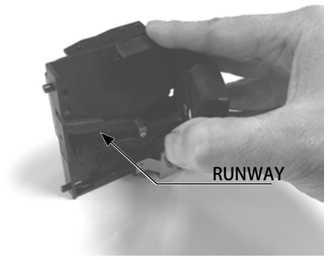
CLEANING THE COIN SELECTOR (SR3) <continued>

1 Remove and clean smears by using a damp soft cloth dipped in water. DO NOT use any diluted chemical detergent or cleansing agent as this will impair the workings of the component.



2 Open the reject gate to gain access to the rundown path.



3 Remove the dirt and stains from the runway by wiping off with a soft damp cloth.

4 After wiping off as per previous step, further apply a dry cloth to completely dry the coin Selector.

12-2 FAULT FINDING

Fault Finding

The following information is presented for customers' guidance in rectifying a fault but does not cover all possible causes.

All acceptors with electronic faults should be returned to an approved service centre for repair.

SYMPTOM	INVESTIGATE	POSSIBLE CAUSE
Acceptor does not work (all coins reject)	Connector	Poor Contact
		Loose Wire
	Power Supply	Not switched on
		Incorrect voltage
		Inadequate current
		Rise time too slow
	Inhibit all inputs	Acceptor Inhibited
	Accept gate	Gate not free or dislocated
	Accept channel	Obstruction
	Reject gate	Not fully closed
	LED on rear cover RED	EEPROM chksm error
		SR Sensor fault
		Credit opto fault
		Credit sensor blocked
		Reject lever pressed
	LED on rear cover YELLOW	Reinstall power
Poor Acceptance	Power Supply	Voltage less than 10v (Voltage drops when coil engages)
	Accept gate	Gate jam or dislocated
	Connector	Loose
	Coin rundown	Dirty
	Bank Select	Both banks enabled
Coin stick or jam in acceptor.	Accept channel	Acceptor dirty or may have some damage
	Accept gate	
	Reject gate	
A true coin type rejects	Label	Coin not programmed
No accept signal	Connector	Loose or broken wire
	Accept channel	Path dirty or obstructed

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12-3 ADJUSTING THE PRICE OF PLAY (EXCEL)

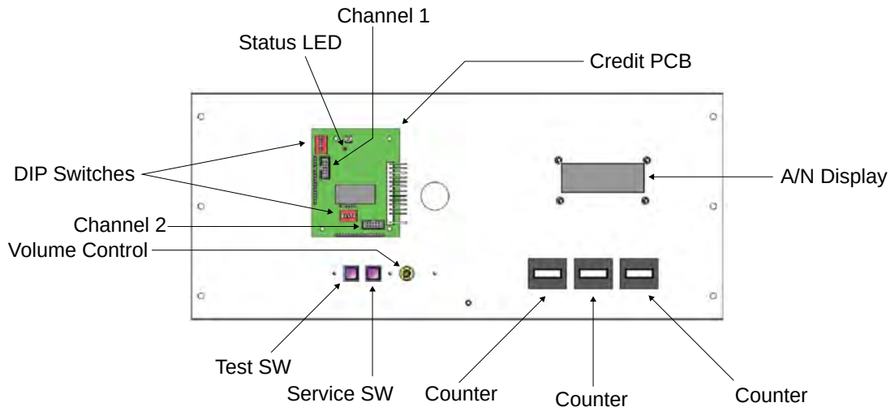
STOP IMPORTANT

• The price of play is determined by the configuration of switches located on either an EXCEL board or VTS board. The type of board used is determined by product location. Switch settings for both types of board remain the same.

This product comes equipped with a Crane NRI Coin Acceptor. To adjust the price of play ALL credit setting are adjusted via the EXCEL CREDIT BOARD.

The Credit Board is controlled by 2 DIL Switches. These allow the operator to select the price of play, type of coin acceptor and region.

EXCEL Credit Board



DIL SW3 (Regional Settings)
Adjust these switches to specify the type of Coin Acceptor used and currency.

Default = SW1&SW2 ON - NRI in parallel mode, Sterling.

TEST BUTTON	Provides access to the TEST MENU when pressed.
SERVICE BUTTON	Provides a SERVICE CREDIT when pressed
Status LED	Flashes when functioning.
CHANNEL 1	Not Used
CHANNEL 2	To Coin Acceptor (SR3 TYPE.)
DIL SW1 (credit settings)	Adjust to required price of pay.
VOL CONTROL	MAIN VOLUME ADJUSTMENT (FRONT SPEAKERS)

REGIONAL AND ACCEPTOR SETTINGS (SW3)

Note: These switch settings are under constant review and may change due to world currency updates.

Set SW 1 according to the option settings found in the relevant Price of Play Settings Table on the following pages.

Set SW 3 on the VTS /Excel board as shown in the table above corresponding to the country required.

Country	Setting	Switch 3 Setting						Credit Board Mode Settings Switch 3											
								Coin Validator Programming						C120/SR3 Only					
		SW1	SW2	SW3	SW4	SW5	SW6	COIN1	COIN2	COIN3	COIN4	COIN5	COIN6	COIN7	COIN8	COIN9	COIN10	COIN11	COIN12
UK	Coin Controls C220 Parallel	OFF	OFF	OFF	OFF			£1	50p new	20p	10p	-	50p old	-	-				
UK	Coin Controls C220 Binary	ON	OFF	OFF	OFF			£1	50p new	20p	10p	-	50p old	-	£2				
UK	Coin Controls C220 Binary	OFF	ON	OFF	OFF			£1	50p new	20p	10p	-	£2	-	50p old				
UK	Coin Controls SR3 Parallel	ON	ON	OFF	OFF			£1	50p new	20p	10p	-	£2	-	50p old	-			
UK Euro	Coin Controls SR3 Parallel	OFF	OFF	ON	OFF			£2 €2	£1 €1	50p new 50¢	20p 20¢	10p 10¢	-	-	-	50p old	-	-	-
UK	Mars ME/MS 111 Parallel	ON	OFF	ON	OFF			£1	£2	20p	10p	50p new	50p old						
UK	NRI Parallel	OFF	ON	ON	OFF			10p	20p	50p	£1	£2							
Belgium	Parallel	ON	ON	ON	OFF			-	50BFr	20BFr	5BFr	-	-						
Holland	Parallel	OFF	OFF	OFF	ON			-	5NLG	2.5NLG	1NLG								
Austria	SR3 Parallel	ON	OFF	OFF	ON			20Sch	10Sch	5Sch	1Sch								
Spain	Coin Controls C220 Binary	OFF	ON	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	200Pt old	50Pta old	25Pta old 200Pta	-	50Pta old	25Pta old	-
Spain	SR3/NRI Parallel	ON	ON	OFF	ON			500Pta	200Pta	100Pta	50Pta	25Pta	-	-	-				
Spain	Coin Controls C220 Parallel	OFF	OFF	ON	ON			100Pta	50Pta new	-	25Pta new	-	50Pta old	-	25Pta old				
Portugal Euro	Parallel	ON	OFF	ON	ON			200Es €1	100Es 50¢	50Es	-	-	-	-	-				
TBA						OFF		TBA											
						ON		TBA											
Channels							OFF	Direct Mode											
							ON	2 channel Mode											

Please Note
The credit board automatically sets the validator for parallel and binary operation through an output on pin 8 of the 17 way pinstrip. For the feature to work it is necessary for the validator interconnecting cable to include at wire at this position

EURO PRICE OF PLAY SETTINGS (SW1)

	Price	Bonus			DIL Switch 1				
					1	2	3	4	5
1	10¢	50¢ = 5 plays	€1 = 10 plays	€2 = 20 plays	OFF	OFF	OFF	OFF	OFF
2	10¢	50¢ = 6 plays @ 8.33p per play	€1 = 12 plays @ 8.33¢ per play	€2 = 24 plays @ 8.33¢ per play	**ON**	OFF	OFF	OFF	OFF
3	20¢	50¢ = 2.5 plays	€1= 5 plays	€2 = 10 plays	OFF	**ON**	OFF	OFF	OFF
4	20¢	50¢ = 3 plays @ 16.66¢ per play	€1 = 6 plays @ 16.66¢ per play	€2 = 12 plays @ 16.66¢ per play	**ON**	**ON**	OFF	OFF	OFF
5	30¢	50¢ = 1.66 plays	€1 = 3.33 plays	€2 = 6.66 plays	OFF	OFF	**ON**	OFF	OFF
6	30¢	50¢ = 1.66 plays	€1 = 4 plays @ 25¢ per play	€2 = 8 plays @ 25¢ per play	**ON**	OFF	**ON**	OFF	OFF
7	30¢	50¢ = 2 plays @ 25¢ per play	€1 = 4 plays @ 25¢ per play	€2 = 8 plays @ 25¢ per play	OFF	**ON**	**ON**	OFF	OFF
8	30¢	50¢ = 2 plays @ 25¢ per play	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play	**ON**	**ON**	**ON**	OFF	OFF
9	40¢	50¢ = 1.25 plays	€1 = 2.5 plays	€2 = 5 plays	OFF	OFF	OFF	**ON**	OFF
10	40¢	50¢ = 1.25 plays	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play	**ON**	OFF	OFF	**ON**	OFF
11	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 4 plays	OFF	**ON**	OFF	**ON**	OFF
12	50¢	50¢ = 1 play	€1 = 3 plays @ 33.33¢ per play	€2 = 6 plays @ 33.33¢ per play	**ON**	**ON**	OFF	**ON**	OFF
13	50¢	50¢ = 1 play	€1 = 2 plays	€2 = 5 plays @ 40¢ per play	OFF	OFF	**ON**	**ON**	OFF
14	60¢	50¢ = 0.83 play	€1 = 1.66 plays	€2 = 3.33 plays	**ON**	OFF	**ON**	**ON**	OFF
15	60¢	50¢ = 0.83 play	€1 = 2 plays @ 50¢ per play	€2 = 4 plays @ 50¢ per play	OFF	**ON**	**ON**	**ON**	OFF
16	80¢	50¢ = 0.62 play	€1 = 1.25 plays	€2 = 2.5 plays	**ON**	**ON**	**ON**	**ON**	OFF
17	80¢	£1 = 1.25 plays	€1.50 = 2 plays @ 75¢ per play	€2 = 2.5 plays	OFF	OFF	OFF	OFF	**ON**
18	€1	2x50¢ = 1 play	€1 = 1 play	€2 = 2 plays	**ON**	OFF	OFF	OFF	**ON**
19	€1	2x50¢ = 1 play	€1 = 1 play	€2 = 3 plays @ 66.6¢ per play	OFF	**ON**	OFF	OFF	**ON**
20	€1	2x50¢ = 1 play	€2 = 2 plays	€4 = 5 plays @ 80¢ per play	**ON**	**ON**	OFF	OFF	**ON**
21	€1.50	3x50¢ = 1 play	€1 = 0.66 plays	€3 = 2 plays	OFF	OFF	**ON**	OFF	**ON**
22	€1.50	3x 50¢ = 1 play	€1 = 0.66 plays	€2 = 2 plays @ €1 per play	**ON**	**OFF**	**ON**	OFF	**ON**
23	€2	4x 50¢ = 1 play	€1 = 0.5 play	€2 = 1 play	OFF	**ON**	**ON**	OFF	**ON**
24	€2	4x 50¢ = 1 play	€1 = 0.5 play	€5 = 3 plays @ €1.66 per play	**ON**	**ON**	**ON**	OFF	**ON**
25	€3	6x50¢ = 1 play	€1.50 = 0.5 play	€3 = 1 play	OFF	OFF	OFF	**ON**	**ON**
26	€3	6x50¢ = 1 play	€1.50 = 0.5 play	€5 = 2 plays @ €2.50 per play	**ON**	OFF	OFF	**ON**	**ON**
27	€5	€1 = 0.2 play	€5 = 1 play	€10 = 2 plays	OFF	**ON**	OFF	**ON**	**ON**
28	€5	€1 = 0.2 play	€5 = 1 play	€10 = 3 plays @ 3.33¢ per play	**ON**	**ON**	OFF	**ON**	**ON**
29	€7.50	€5 = 0.66 play	€10 = 1.33 plays	€15 = 2 plays	OFF	OFF	**ON**	**ON**	**ON**
30	€7.50	€5 = 0.66 play	€10 = 1.33 plays	€10 = 2 plays @ €5 per play	**ON**	OFF	**ON**	**ON**	**ON**
31	€10	€10 = 1 play	€20 = 2 play	€30 = 3 play	OFF	**ON**	**ON**	**ON**	**ON**
32	Free Play				**ON**	**ON**	**ON**	**ON**	**ON**

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STERLING PRICE OF PLAY SETTINGS (SW1)

	Price	Bonus			DIL Switch 1				
					1	2	3	4	5
1	10p	50p = 5 plays	£1 = 10 plays	£2 = 20 plays	OFF	OFF	OFF	OFF	OFF
2	10p	50p = 6 plays @ 8.33p per play	£1 = 12 plays @ 8.33p per play	£2 = 24 plays @ 8.33p per play	**ON**	OFF	OFF	OFF	OFF
3	20p	50p = 2.5 plays	£1= 5 plays	£2 = 10 plays	OFF	**ON**	OFF	OFF	OFF
4	20p	50p = 3 plays @ 16.66p per play	£1 = 6 plays @ 16.66p per play	£2 = 12 plays @ 16.66p per play	**ON**	**ON**	OFF	OFF	OFF
5	30p	50p = 1.66 plays	£1 = 3.33 plays	£2 = 6.66 plays	OFF	OFF	**ON**	OFF	OFF
6	30p	50p = 1.66 plays	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play	**ON**	OFF	**ON**	OFF	OFF
7	30p	50p = 2 plays @ 25p per play	£1 = 4 plays @ 25p per play	£2 = 8 plays @ 25p per play	OFF	**ON**	**ON**	OFF	OFF
8	30p	50p = 2 plays @ 25p per play	£1 = 3 plays @ 33.33p per play	£2 = 6 plays @ 33.33p per play	**ON**	**ON**	**ON**	OFF	OFF
9	40p	50p = 1.25 plays	£1 = 2.5 plays	£2 = 5 plays	OFF	OFF	OFF	**ON**	OFF
10	40p	50p = 1.25 plays	£1 = 3 plays @ 33.3p per play	£2 = 6 plays & 33.3p per play	**ON**	OFF	OFF	**ON**	OFF
11	50p	50p = 1 play	£1 = 2 plays	£2 = 4 plays	OFF	**ON**	OFF	**ON**	OFF
12	50p	50p = 1 play	£1 = 3 plays @ 33.3p per play	£2 = 6 plays @ 33.3p per play	**ON**	**ON**	OFF	**ON**	OFF
13	50p	50p = 1 play	£1 = 2 plays	£2 = 5 plays @ 40p per play	OFF	OFF	**ON**	**ON**	OFF
14	60p	50p = 0.83 play	£1 = 1.66 plays	£2 = 3.33 plays	**ON**	OFF	**ON**	**ON**	OFF
15	60p	50p = 0.83 play	£1 = 2 plays @ 50p per play	£2 = 4 plays @ 50p per play	OFF	**ON**	**ON**	**ON**	OFF
16	80p	50p = 0.62 play	£1 = 1.25 plays	£2 = 2.5 plays	**ON**	**ON**	**ON**	**ON**	OFF
17	80p	£1 = 1.25 plays	£1.50 = 2 plays @ 75p per play	£2 = 2.5 plays	OFF	OFF	OFF	OFF	**ON**
18	£1	2x50p = 1 play	£1 = 1 play	£2 = 2 plays	**ON**	OFF	OFF	OFF	**ON**
19	£1	2x50p = 1 play	£1 = 1 play	£2 = 3 plays @ 66.6p per play	OFF	**ON**	OFF	OFF	**ON**
20	£1	2x50p = 1 play	£2 = 2 plays	£4 = 5 plays @ 80p per play	**ON**	**ON**	OFF	OFF	**ON**
21	£1.50	3x50p = 1 play	£1 = 0.66 plays	£3 = 2 plays	OFF	OFF	**ON**	OFF	**ON**
22	£1.50	3x 50p = 1 play	£1 = 0.66 plays	£2 = 2 plays @ £1 per play	**ON**	**OFF**	**ON**	OFF	**ON**
23	£2	4x 50p = 1 play	£1 = 0.5 play	£2 = 1 play	OFF	**ON**	**ON**	OFF	**ON**
24	£2	4x 50p = 1 play	£1 = 0.5 play	£5 = 3 plays @ £1.66 per play	**ON**	**ON**	**ON**	OFF	**ON**
25	£3	6x50p = 1 play	£1.50 = 0.5 play	£3 = 1 play	OFF	OFF	OFF	**ON**	**ON**
26	£3	6x50p = 1 play	£1.50 = 0.5 play	£5 = 2 plays @ £2.50 per play	**ON**	OFF	OFF	**ON**	**ON**
27	£5	£1 = 0.2 play	£5 = 1 play	£10 = 2 plays	OFF	**ON**	OFF	**ON**	**ON**
28	£5	£1 = 0.2 play	£5 = 1 play	£10 = 3 plays @ £3.33p per play	**ON**	**ON**	OFF	**ON**	**ON**
29	£7.50	£5 = 0.66 play	£10 = 1.33 plays	£15 = 2 plays	OFF	OFF	**ON**	**ON**	**ON**
30	£7.50	£5 = 0.66 play	£10 = 1.33 plays	£10 = 2 plays @ £5 per play	**ON**	OFF	**ON**	**ON**	**ON**
31	£10	£10 = 1 play	£20 = 2 play	£30 = 3 play	OFF	**ON**	**ON**	**ON**	**ON**
32	Free Play				**ON**	**ON**	**ON**	**ON**	**ON**

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13 LAMPS AND LIGHTING

⚠WARNING

- **When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.**
- **Be sure to use lamps of the designated rating. Using lamps of undesignated rating can cause a fire or malfunctioning.**
- **There is the danger of short circuits or smoke generation due to deterioration of insulation in lighting fixtures resulting from age deterioration. Check for anomalies such as the following: Does it smell like something is burning? Is there socket discoloration? Are any lamps being replaced frequently? Do lamps not go on properly?**

⚠CAUTION

The Coin Door Lamp utilises a 12v 1.2w Wedge Bulb. It is important that you replace this bulb or any other bulb of that of the same voltage and rating. Failing to observe this caution may result in PCB failure or possible fire hazard.

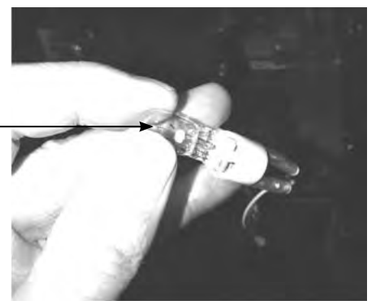
13-1 REPLACING THE COIN DOOR LAMP

Step 1. Open the Console lid and locate the Lamp Housing directly behind the Coin Insert Bezel.

Step 2. Hold the Lamp Housing firmly between your index finger and thumb and gently pull upwards. Do Not try to remove the Lamp Housing whilst holding the bulb as the bulb may break causing injury.

Step 3. Once the Lamp Housing has been removed, carefully hold the bulb between your fingers and pull the Lamp Housing away.

Do not twist either bulb or Lamp Housing whilst removing the bulb as this may cause damage to both bulb and or Housing.



Step 4. Simply push-fit a replacement bulb of the same type and follow these steps in reverse to refit.

13-2 REPLACING THE LADDER / WINLINE LED's

⚠ WARNING

TAKE CARE WHEN ACCESSING THE INTEGRAL PARTS OF THE MACHINE.

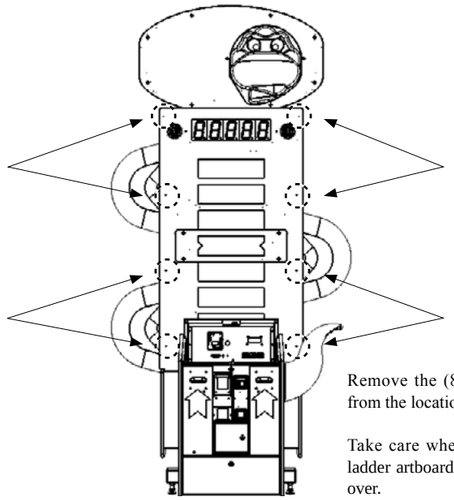
MAKE SURE POWER IS REMOVED BEFORE SERVICING.

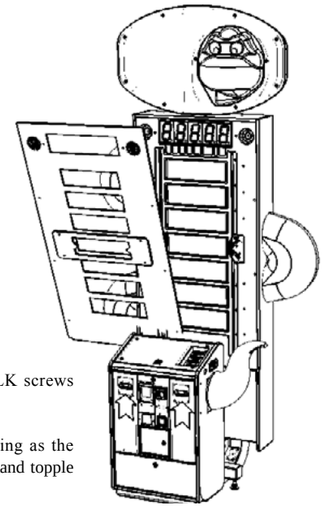
ONLY TOUCH PARTS WHICH ARE OUTLINED IN THE INSTRUCTIONS BELOW. FAILURE TO OBSERVE THIS CAUTION MAY RESULT IN INJURY OR COMPONENT DAMAGE.

REMOVING THE LADDER ARTWORK PANEL

1 REMOVE THE POWER and DISCONNET THE POWER CABLE

2 To access the LEDs remove the Ladder Artwork Panel by unscrewing the (8) M4x30 MSCR PH BLK from the outer edges.





Remove the (8) M4X30 MSCR PH BLK screws from the locations shown.

Take care when removing the final fixing as the ladder artboard may become unbalanced and topple over.

The LED strips are positioned upon each rung of the ladder (including the uprights), The center WIN LINE and the "SUPERWIN" feature at the top of the Ladder.

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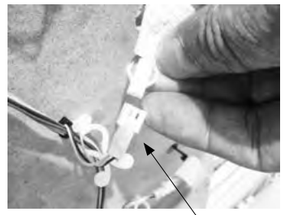
3 The LED strips are adhered to the ladder board using a purpose adhesive strip. Identify the LED strip which is to be changed, disconnect it and carefully peel it away from the Ladder Board.

Locate LED strip to be replaced.

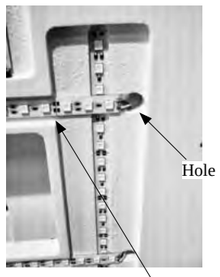


Disconnect connector at rear of board

Carefully peel away LED strip

4 Apply the NEW LED strip by peeling away the protective backing and carefully placing it in to position. Press firmly along the length of the strip between each LED segment taking care not to apply to much pressure. Reconnect the LED harness.

Peel away the protective backing tape



Hole

Apply the new LED strip into loaction and feeed the harness through the hole in the ladder board

Reconnect connect the harness at rear of board

5 Follow step 2 in reverse to re attach the Ladder Artwork Panel taking care not to overtighten the fixings.

13-3 REPLACING THE 5 DIGIT NUMERIC DISPLAY

⚠ WARNING

TAKE CARE WHEN ACCESSING THE INTEGRAL PARTS OF THE MACHINE.

MAKE SURE POWER IS REMOVED BEFORE SERVICING.

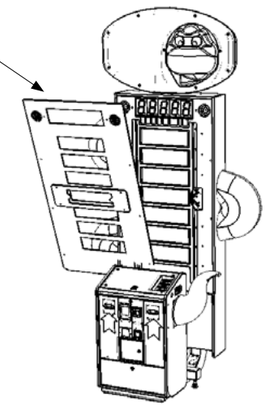
ONLY TOUCH PARTS WHICH ARE OUTLINED IN THE INSTRUCTIONS BELOW. FAILURE TO OBSERVE THIS CAUTION MAY RESULT IN INJURY OR COMPONENT DAMAGE.

REMOVING THE WHT LED ARRAY

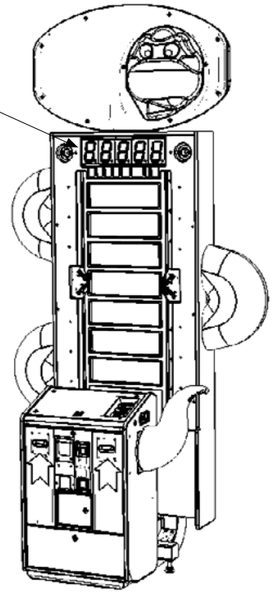
1 REMOVE THE POWER and DISCONNET THE POWER CABLE

2 Follow instruction 2 from the previous step to remove the Ladder Artwork Panel.

Remove Ladder Artwork Panel using instructions from previous step.



5 Digit Numeric Display.



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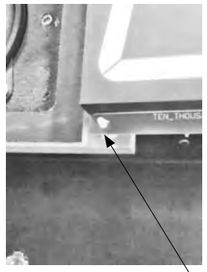
3 The 5 digit LED Board is located at the top of the cabinet. To remove the LED board simply press the locating pins on each of the 4 PCB mounts to release. Disconnect harness at rear of PCB and remove.

5 Digit LEd Display

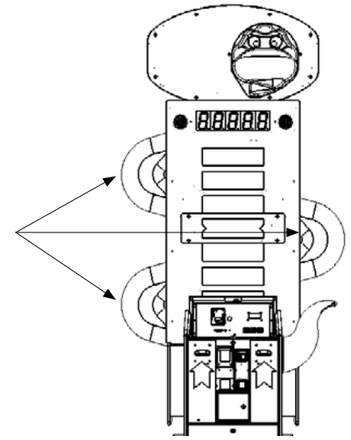


PCB mount

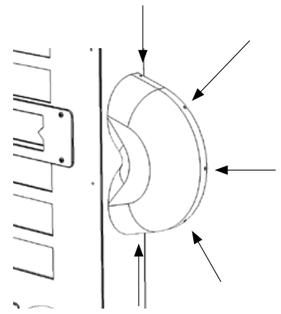
4 Replace the 5 Digit LED board and reassemble by following these instructions in revers order.

13-4 REPLACING THE LED (WHT) SNAKE BODY

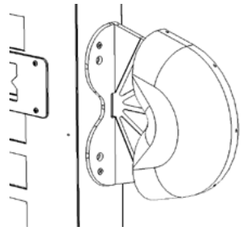
1 Locate the Snake Body segment to which the LEDs are to be replaced.



2 Remove the (5) M4 fixings from around the outer edge of the segment.



3 Carefully slide off the acrylic shell to reveal the LED strips.



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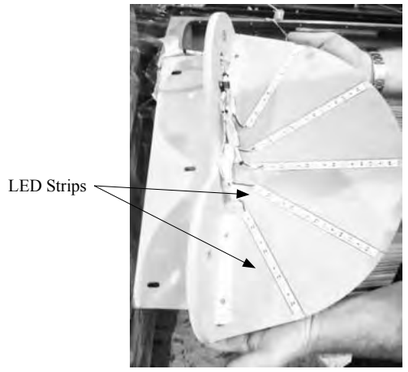
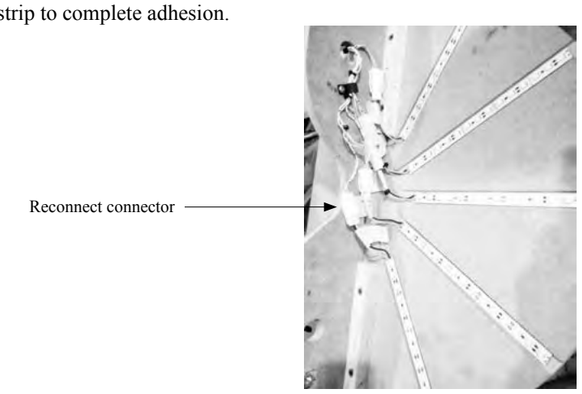
4 Each of the (5) LED strips are adhered to the back of the Snake Body. Disconnect the harness to the LED strip to be removed and carefully peel away the LED strip from the board.



5 Peel the backing away from the NEW LED strip to be added and offer up to Snake Body. Adhere into position pressing firmly along the strip to complete adhesion.



6 To refit the Snake Body Cover and secure into place - follow these instrucions in reverse order.

13-5 REPLACING THE LED (WHT) FEATURE REEL / TRACKER

⚠CAUTION

The LED Strips behind the Feature or Tracker Band are soldered in its connection to the harness, Take care when using appliances such as soldering/desoldering equipment. Only qualified personel should carry out such tasks.

⚠ WARNING

TAKE CARE WHEN ACCESSING THE INTEGRAL PARTS OF THE MACHINE.

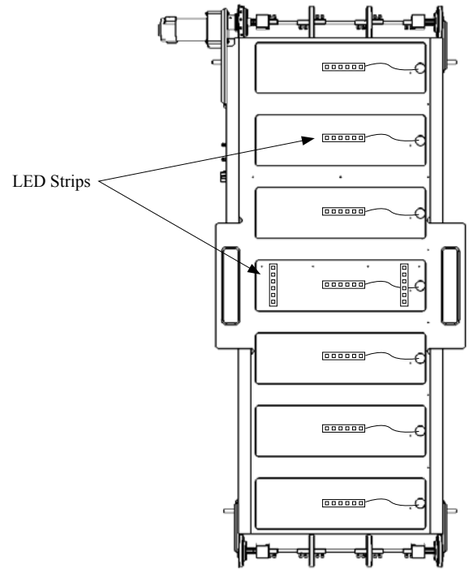
MAKE SURE POWER IS REMOVED BEFORE SERVICING.

ONLY TOUCH PARTS WHICH ARE OUTLINED IN THE INSTRUCTIONS BELOW. FAILURE TO OBSERVE THIS CAUTION MAY RESULT IN INJURY OR COMPONENT DAMAGE.

1 REMOVE POWER from the cabinet and diconnect the POWER LEAD.

2 Follow steps 1 through to 8 on Chapet 11 section 1 of this manual to remove Tracker Unit and Feature Band.

3 Remove the Feature band to reveal the individual LED Strips.



Tracker Unit

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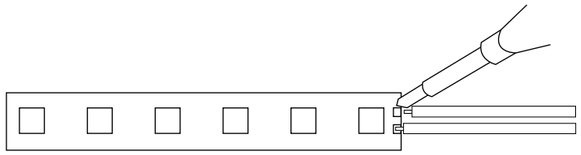
4 The LED Strips are adhered into position but the connections are soldered into place. Before removel take note of the position of the wires. To remove the LED Strips, unsolder the two wires (Yel & Blk). Then carefully peel away the LED Stirp to remove.



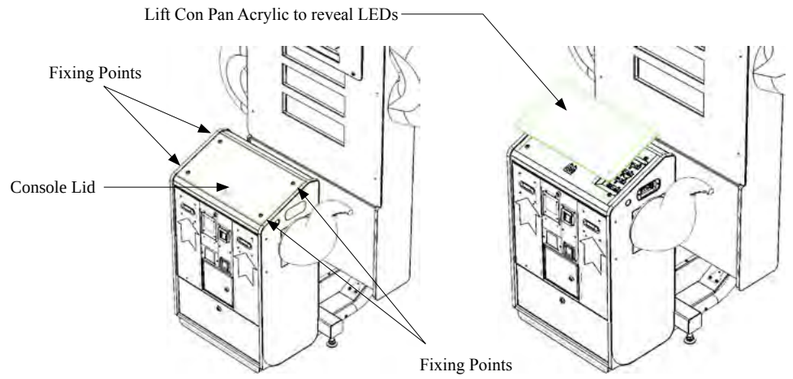
5 On the NEW LED strip, peel off the protective backing and adhere it in place. Resolder the wires in the same location as when removed.

6 Reassemble following the instructions in Chaper 11 section 1 of this manual in reverse order.

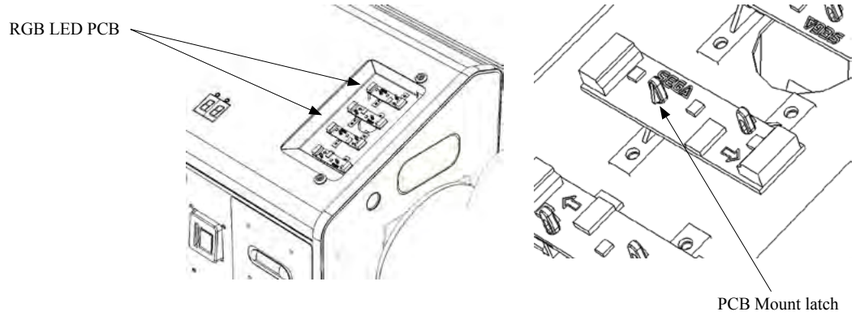
13-6 REPLACING THE LED (RGB) PULL

1 REMOVE POWER from the cabinet and diconnect the POWER LEAD.

2 Remove the Control Panel Acrylic by unscrewing the (4) fixing located at each corner of the Console Lid.



3 Locate the LED PCB to be replaced. To remove, press in the latch on the PCB Mount to release. Disconnect harness and remove. *NOTE ORIENTATION OF PCB*



4 Clip the NEW LED into place and reconnect the harness (taking note of the orientation IN/OUT)

5 Follow steps 1 to 3 in reverse order to reassemble.

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14 PERIODIC INSPECTION

The items listed below require periodic check and maintenance to retain the performance of this machine and to ensure safe business operation.
When handling the controller, the player will be in direct contact with it. In order to always allow the player to enjoy the game, be sure to clean it regularly. Also, it is advisable to provide wet tissue, etc. available for player use.

⚠ WARNING

- **Every 6 months check to see if power cords are damaged, the plug is securely inserted, dust is accumulated between the socket outlet and the power plug, etc. Dust will accumulated if using the product regularly. Continued use with the presence of accumulated dust may result in a fire and or electric shock.**
- **There is the danger of accidents involving electrical shorts circuits or fire caused by factors such as the deterioration of insulation in electrical and electronic equipment over time. Check that there are no abnormalities such as odors from burning.**
- **For all normal maintenance procedures, always turn off the power before beginning. Starting the procedures with the power still on can result in electric shocks or short circuits.**
- **Do not use a water jet (high pressure washing device) or hose to clean this product. It was not designed to be cleaned by a water jet. Water could get inside and cause electrocution or short circuits. The product could also be damaged in such a way that it is difficult to repair.**

⚠ CAUTION

- **Be careful not to get your fingers caught when opening/closing or attaching/ removing doors, lids and other such parts.**
- **When working inside the cabinet, you could get caught on parts or scratch yourself on them. Check the inside of the cabinet and be aware of where the parts are before performing the work.**

Cleaning the Cabinet Surfaces

When the cabinet surfaces are badly soiled, remove stains with a soft cloth dipped in water or diluted with a chemical detergent and squeezed dry. To avoid damaging surface finish, do not use such solvents as thinner, benzine, etc. other than ethyl alcohol, or abrasives, bleaching agent and chemical dustcloth.
Some general-purpose household, kitchen and furniture cleaning products may contain strong solvents that degrade plastic components, coatings, and print. Before using any cleaning product, read the product's cautionary notes carefully and test the product first on a small area that is not highly visible.

STOP IMPORTANT

Isopropyl Alcohol is a flammable liquid.

Do not use this cleaner near an exposed flame or clean the screen when it is powered on..

PERIODIC INSPECTION TABLE

PERIOD	ITEMS	DESCRIPTION
As appropriate	CABINET SURFACE	Cleaning
	LAMPS	Inspection
Daily	CABINET	Confirm adjusters contact floor
		Confirm stability
Weekly	FEATURE REEL	Check rotation
		Check alignment
	TICKET DISPENSER	Check Operation
		Check Ticket Total
Monthly	CONTROLLER	Inspect volume pots/Calibrate
	COIN SELECTOR	Coin switch inspection
		Coin insertion test
	RED ONE (UN COCH)	Settings check
Every 3 Months	CONTROLLER	Apply grease
	TICKET DISPENSER	Cleaning
	COIN SELECTOR	Cleaning
	FEATURE REEL	Check Illumination
	AUDIO	Check Output
1 year	RED ONE (UN COCH)	Cleaning
	POWER PLUG	Inspection, Cleaning
	FRONT CABI INTERIOR	Cleaning

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15 TROUBLESHOOTING

11-1 TROUBLESHOOTING (WHEN NO ERROR MESSAGE IS SHOWN)

⚠WARNING

- In order to prevent electric shock and short circuit, be sure to turn power off before performing work.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock or short circuit.
- After removing the cause of the functioning of the Circuit Protector, reinstate the Circuit Protector. Depending on the cause of the functioning, using the Circuit Protector as is without removing the cause can cause generation of heat and fire hazard.
- In the event that a problem cannot be resolved by employing the procedures listed in this Manual, be sure to request service from the office shown on this Manual or the dealer from whom the product was originally purchased. Attempts to employ procedures other than those specified in this Manual can cause electrical shock, shorting, or fire.
- In the event of a problem that is not described here, be sure to contact the office shown on this Manual or the dealer from whom the product was originally purchased. Careless attempts at repair can result in electrical shock, shorting, or fire.

Replacing Fuses

⚠WARNING

- In case fuse replacements other than those stated in this manual are necessary, contact where you purchased the product from for inquiries regarding this matter.
- In order to prevent an electric shock, be sure to turn power off and unplug from the socket outlet before performing work by touching the internal parts of the product.
- Be careful so as not to damage wirings. Damaged wiring can cause electric shock and short circuit accidents.
- Be sure to use fuses meeting specified rating. Using fuses exceeding the specified rating can cause fire and electric shock accidents.
- After eliminating the cause of the blowing of fuse, replace the fuse. Depending on the cause of fuse blowing, continued use with the fuse as is blown can cause generation of heat and fire hazard.

⚠WARNING

- This work should be performed by site maintenance personnel or other skilled professionals. Worl performed by non-techical personnel may cause a severe accident such as electric shock. If there are no sire maintenance personnel or other skilled professionals available, turn the power off immediately and contact the office given in this manual or from the point of purchase.
- When working with the product, be sure to turn the power off. Working with the power on may cause and electric shock or short circuit.
- Be careful not to damage any wires whilst working on this product. Be aware when closing dorrs or fitting panels as wires may become trapped. Damaged wires can cause electric shock, short circuit or fire hazzard.
- If problems other than those covered in this manual arise, or if no improvements can be noted after measures given in this manual have been taken, do not take measures discriminately. Remove power from the product immediately and contact the office shown in this manual or point of purchase. Indiscriminate countermeasures could lead to unforseeable accidents. They could also result in permanent damage. Also, if the power is left on while there is an abnormality, a fire, electric shock or other serious accident may occur.

STOP IMPORTANT

- If an error message is displayed, identify the cause right away and take the appropriate countermeasures. Leaving the error unaddressed could result in a breakdown.
- If a problem occurs, first inspect the connection of any wiring connectors.
- Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

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PROBLEM	CAUSE	COUNTERMEASURE
With main switch ON there is no activation	Power is not supplied	Insert power lead all the way into outlet
	Supply voltage is not correct	Make sure that supply voltage is correct
	Circuit protector activated	Reset circuit protector/replace fuse
There is sound and lighting but no led Display	LED signal connector is not properly connected	Check connections of the LED and RedOne connector
No sound	Volume not properly adjusted	Adjust volume
	Poor connection of connectors	Check connections of RedOne
	Board, amp or speaker fault	Run speaker test to check.
Switch and volume pot input does not work	Poor connection or connectors	Check the connection to RedOne
Feature Reel does not spin	Poor connection to motor	check the connections to the Motor
	Poor connection on RedOne	Check connections of motor harness to RedOne
No operation, just a few static lamps lit	Poor condition of cabinet	Refer to list of errors
	RedOne error	Contact point of purchase
Controller does not work properly	Improper controller settings	Configure settings in TEST mode
	Poor attachment of volume pots or misalignment of gears	Adjust volume pot and set in calibration settings
	Poor connection of connectors	Check volume pot connections
	Volume pot failure	Replace volume pot
Game plays but lamp sequencing and Reel numbers do not correspond	Wheel alignment incorrect	Realign Reel using Test Menu
	Power to redOne inconsistant	Check DC5V supply at RedOne
	Connections to RedOne made incorrectly	Check connections against manual diagram.
No ticket payout	Poor connections at ticket dispenser	Check connections at ticket dispenser
	Poor connections at RedOne	Check connections at RedOne
	Possible faulty Ticket dispenser	Swap ticket dispenser over from left to right to fault find
	Ticket Jam	Clear ticket debris from ticket exit point.

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16 GAME BOARD

⚠ WARNING

- **When working with the product, be sure to turn the power off. Working with the power on may cause an electric shock or short circuit.**
- **Be careful not to damage the wires. Damaged wires may cause an electric shock, short circuit or present a risk of fire.**
- **Do not use this product with connectors other than those that were connected and used with the game board at the time of shipping. Do not carelessly connect wires to connectors that were not used at the time of shipping, as this may cause overheating, smoke or fire damage.**

⚠ CAUTION

In this product, setting changes are made during the test mode. The game board need not be operated. Use the game board, etc. as is with the same setting made at the time of shipment so as not to cause electrical damage or malfunction.

STOP IMPORTANT

Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.

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16-1 GAME BOARD - HANDLING PRECAUTIONS

⚠ WARNING

- **To prevent electric shock or IC Board malfunctioning, be sure to turn off the power for the cabinet when installing or removing the IC Board.**
- **Extraneous matter such as dust on the IC Board can cause the IC Board to generate heat and result in a fire due to short circuit, etc. Ensure the IC Board surfaces are always kept clean.**
- **Keep the IC board well cooled. RINGWIDE is provided with ventilating fans. Do not block the air outlets of these fans. Also do not place anything closely to RINGWIDE. Failure to observe these instructions may cause an overheating and fire.**
- **Always follow the usage conditions from SEGA as well as the usage conditions for the cabinet you are using for RED ONE (UN COCH). Failure to do so may cause an overheating and fire.**

STOP IMPORTANT

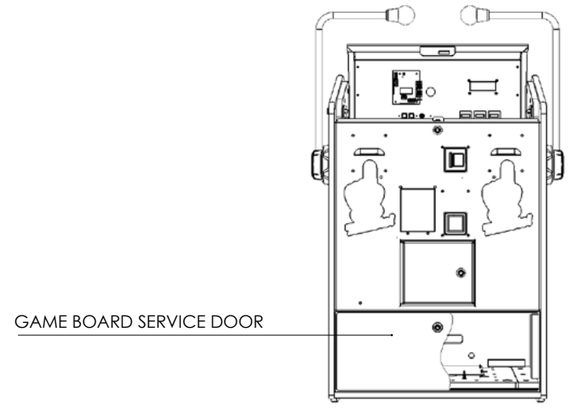
- **Be sure to connect the IC Board and connectors completely. Insufficient insertion can damage IC Board, etc.**
- **For the IC Board circuit inspection, only the use of Logic Tester is permitted. The use of ordinary testers is not permitted as these can damage the IC Board.**
- **Do not subject the IC Board to static electricity when installing the IC Board in the cabinet or when connecting wire harness connectors to the IC Board.**
- **When soldering buttons, etc. to the wire harnesses, be sure to remove the wire harnesses from the IC Board so as not to subject the IC Board to heat.**
- **Some parts are the ones designed and manufactured not specifically for this product. The manufacturers may discontinue, or change the specifications of, such general-purpose parts. If this is the case, SEGA cannot repair or replace a failed product whether or not a warranty period has expired.**

16-2 GAME BOARD - LOCATION & REMOVAL

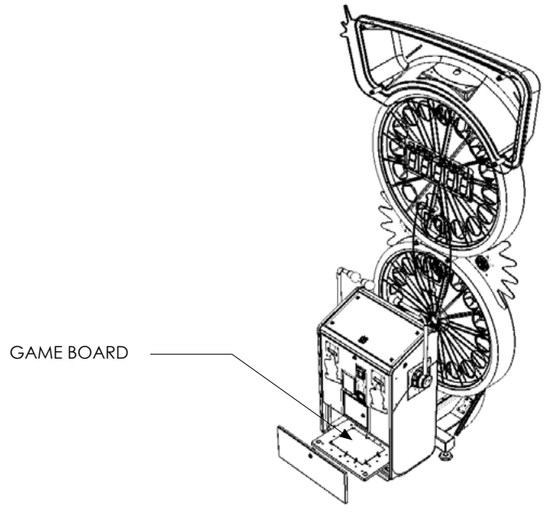
⚠ WARNING

- **When returning the game board after making repairs or replacements, make sure that there are no errors in the connection of connectors. Erroneous connections can lead to electrical shock, short circuits or fires.**
- **When connecting a connector, check the direction carefully. Connectors must be connected in only one direction. If indiscriminate loads are applied in making connections, the connector or its terminal fixtures could be damaged, resulting in electrical shock, short circuits or fires.**

The machine is fitted with Game Board Unit and several other Ancillary Boards which are fitted inside the Display Cabinet. Each machine contains the its own CPU.. Only qualified Personnel should attempt to Service these Units and before gaining access to the machine, it should be isolated from the mains supply



There is only one access point to the GAME BD which is through the GAME BD SERVICE DOOR located at the front of the cabinet. Unlock the GAME BD SERVICE DOOR, the GAME BD is located directly behnid the door. Pull out the draw to improve access.



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16-3 GAME BOARD - INTRODUCTION

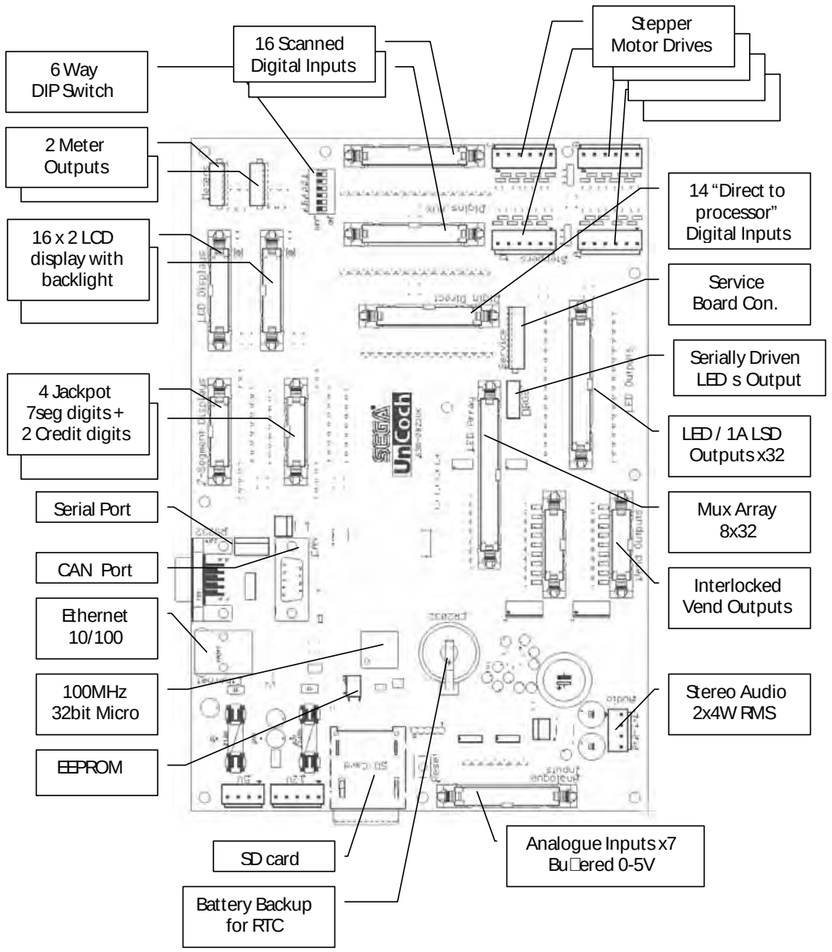
The RED-M board is an arcade game controller capable of driving two simple cabinets at once.
It contains a powerful ARM processor running at 100MHz and many peripherals,
including:

- SD card for game software and data logging
- Audio amplifier for sound effects
- On-board EEPROM (4k x 8bits) for game logging
- 256 x LED array output (Multiplexed as 32 c.c. sinks x 8 rows)
- 16 x 2 Line LCD display interface with controlled backlight
- 2 x 7-segment ‘Credit’ LED display driver
- 4 x 7-segment ‘Credit’ LED display driver
- 4 x 6-wire stepper motor drives
- 4 x high current (1 Amp) switch outputs
- 32 x general purpose 500mA digital outputs (e.g. LED strip drives)
- 24 x general purpose digital inputs
- 8 x buffered analogue inputs, with 5V outputs for pots
- 1 x 100baseT Ethernet port
- 1 x 500Mbit/s CAN port
- 1 x RS232 port
- Controlled by a 100MHz 32-bit processor with an ARM M3 core
- JTAG port, bootstrap programming port.

To achieve the high channel count of inputs and outputs of the RED-M board, mostperipherals to the microcontroller are implemented via I/O expanders driven over I2C
busses.
Critical inputs and outputs (credit, vend, opto. sensors etc.) have dedicated connections directly to the processor.

16-4 GAME BOARD - PARTS DETAIL

LAYOUT



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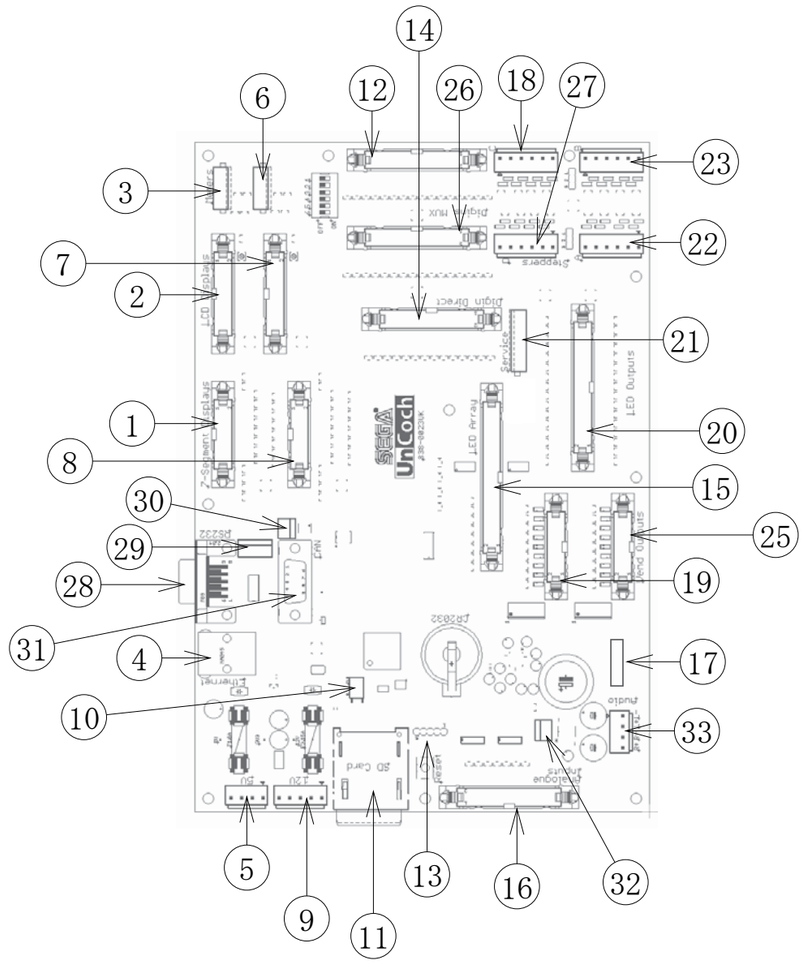
CONNECTOTS, SWITCHES and LEDs

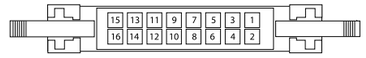
⚠ WARNING

- **When connecting the connector, check the orientation and type carefully and connect securely. The connector must be connected in the proper direction and type. If it is connected in the wrong direction or indiscriminately at an incline, or connected wrong connector, so that a load is applied, the connector or its terminal pins could break, causing a short circuit or fire.**
- **Do not connect components to any connector that are not designated by SEGA. Connecting unspecified components could cause an accident such as an electric shock or fire.**



1 7 - Segment LED Display

LOCATION	TYPE
J1	16W JST RA TYPE

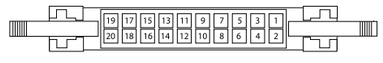


Function	O/P	Pin	Pin	O/P	Function
A Credit UNITS		1	2		A Credit TENS
		3	4		
A SEG a		5	6		A SEG b
A SEG c		7	8		A SEG d
A SEG e		9	10		A SEG f
A SEG g		11	12		A SEG dp
A JP UNIT		13	14		A JP TENS
A JP HUND		15	16		A JP THOU

NOTE: Before connecting, be sure to check the type of connector.

2 LCD Display

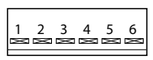
LOCATION	TYPE
J2	20W JST RA TYPE



Function	O/P	Pin	Pin	O/P	Function
	GND	1	2	GND	
	GND	3	4	GND	
V0		5	6		RS
R/W		7	8		E
DB0		9	10		DB1
DB2		11	12		DB3
DB4		13	14		DB5
DB6		15	16		DB7
	LED +	17	18	LED -	
	5V	19	20	GND	

3 Counters / Meters

LOCATION	TYPE
J3	6W JST NH



Function	O/P	Pin
	+12V	1
	+5V	2
GAMES	Meter 0	3
TICKETS	Meter 1	4
Spare Open Collector	Spare_0	5
Spare Open Collector	Spare_1	6

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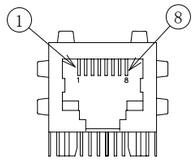
4 Ethernet



LOCATION	TYPE
J4	RJ45

Function	O/P	Pin
TD +		1
TCT		2
TD -		3
RD +		4
RCT		5
RD -		6
NC		7
C_GND		8

5 Power

LOCATION	TYPE
J5	4W JST VH

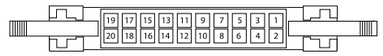
Function	O/P	Pin
+5V		1
+5V		2
0V		3
0V		4

6 Counters / Meters

LOCATION	TYPE
J6	6W JST NH

Function	O/P	Pin
	+12V	1
	+5V	2
Ticket #2 Meter	Meter 2	3
Ticket #3 Meter	Meter 3	4
Spare Open Collector	Spare_2	5
Spare Open Collector	Spare_3	6

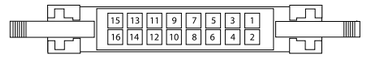
7 LCD Display



LOCATION	TYPE
J7	20W JST RA TYPE

Function	O/P	Pin	Pin	O/P	Function
	GND	1	2	GND	
	GND	3	4	GND	
V0		5	6		RS
R/W		7	8		E
DB0		9	10		DB1
DB2		11	12		DB3
DB4		13	14		DB5
DB6		15	16		DB7
	LED +	17	18	LED -	
	5V	19	20	GND	

8 7 - Segment LED Display



LOCATION	TYPE
J8	16W JST RA TYPE

Function	O/P	Pin	Pin	O/P	Function
B Credit UNITS		1	2		B Credit TENS
		3	4		
B SEG a		5	6		B SEG b
B SEG c		7	8		B SEG d
B SEG e		9	10		B SEG f
B SEG g		11	12		B SEG dp
B JP UNIT		13	14		B JP TENS
B JP HUND		15	16		B JP THOU

9 Power

LOCATION	TYPE
J9	5W JST VH

Function	O/P	Pin
+12V		1
+12V		2
-		3
0V		4
0V		5

16 GAME BOARD

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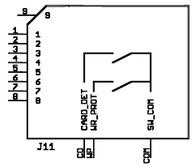
10 NOT USED

LOCATION	TYPE
J10	N/A

11 SD CARD READER FAT16

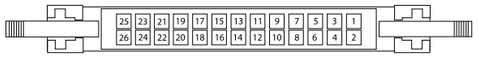
LOCATION	TYPE
J11	4W JST VH



Function	O/P	Pin
CS		1
DATA IN (MOSI)		2
GND		3
PWR		4
CLK (SCLK)		5
GND		6
DATA OUT (MOSO)		7
N/C		8
N/C		9

12 DIGITAL INPUTS MUX0-15

LOCATION	TYPE
J12	26W JST RA TYPE



Function	O/P	Pin	Pin	O/P	Function
PWR	+5V	1	2	+5V	PWR
START SW	MUX0	3	4	MUX1	UP SW
RIGHT SW	MUX2	5	6	MUX3	DOWN SW
GND	GND	7	8	GND	GND
LEFT SW	MUX4	9	10	MUX5	SW 1
SW 2	MUX6	11	12	MUX7	SW 3
GND	GND	13	14	GND	GND
SW 4	MUX8	15	16	MUX9	SW 5
SW 6	MUX10	17	18	MUX11	REFIL SW
GND	GND	19	20	GND	GND
TEST SW	MUX12	21	22	MUX13	SERVICE SW
DIP SW 1	MUX14	23	24	MUX15	DIP SW 2
PWR	+12V	25	26	+12V	PWR

13 BOOT LOADER - DEV PURPOSES ONLY

LOCATION	TYPE
J13	5W SIL HDR

14 DIRECT DIGITAL INPUTS

LOCATION	TYPE
J14	26W JST RA TYPE

Function	I/P	Pin	Pin	I/P	Function
5V		1	2		5V
GND		3	4		GND
COIN IN 1	DID0	5	6	DID1	NOT USED
TICKET COUNT	DID2	7	8	DID3	TICKET COUNT
GND		9	10		GND
WHEEL SW T	DID4	11	12	DID5	NOT USED
WHEEL SW B	DID6	13	14	DID7	NOT USED
GND		15	16		GND
ENC TOP	DID8	17	18	DID9	ECN BOT
NOT USED	DID10	19	20	DID11	NOT USED
GND		21	22		GND
NOT USED	DID12	23	24	DID13	NOT USED
12V		25	26		12V

15 LED MUX ARRAY

LOCATION	TYPE
J15	40W JST RA TYPE

Function	Wire Code	Pin	Pin	Wire Code	Function
R0	YEL/BLK	1	2	YEL/BRN	R1
R2	YEL/RED	3	4	YEL/ORG	R3
R4	YEL/BLU	5	6	YEL/PUR	R5
R6	YEL/GRY	7	8	YEL/WHT	R7
C1	BLU/BLK	9	10	BLU/BRN	C17
C2	BLU/RED	11	12	BLU/ORG	C18
C3	BLU/YEL	13	14	BLU/GRN	C19
C4	BLU/PUR	15	16	BLU/GRY	C20
C5	BLU/WHT	17	18	BLU/PNK	C21
C6	PUR/BLK	19	20	PUR/BRN	C22
C7	PUR/RED	21	22	PUR/ORG	C23
C8	PUR/YEL	23	24	PUR/GRN	C24
C9	PUR/BLU	25	26	PUR/GRY	C25
C10	PUR/WHT	27	28	PUR/PNK	C26
C11	GRY/BLK	29	30	GRY/BRN	C27
C12	GRY/RED	30	32	GRY/ORG	C28
C13	GRY/YEL	32	34	GRY/GRN	C29
C14	GRY/BLU	34	36	GRY/PUR	C30
C15	GRY/WHT	36	38	GRY/PNK	C31
C16	?	38	40	?	C32

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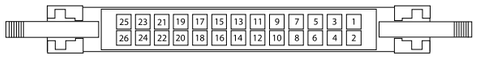
16 ANALOGUE INPUTS

LOCATION	TYPE
J16	26W JST RA TYPE



Function	I/P	Pin	Pin	I/P	Function
5v		1	2		5v
L/H Handle	AID 0	3	4	AID 1	R/H Handle
GND		5	6		GND
GND		7	8		GND
	AID 2	9	10	AID 3	
GND		11	12		GND
GND		13	14		GND
	AID 4	15	16	AID 5	
GND		17	18		GND
GND		19	20		GND
Audio Volume	AID 6	21	22	AID 7	
GND		23	24		GND
12v		25	26		12v

17 RGB

LOCATION	TYPE
J17	6W JST PH K S

Function	O/P	Pin
RGB Latch		1
RGB Data		2
RGB CLK		3
	GND	4
	+5V	5
LED SUPPLY	+5V	6

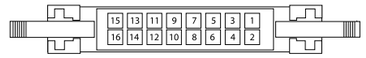
18 MOTOR PORT C

LOCATION	TYPE
J18	6W JST VH - VNR-6N

Function	O/P	Pin
	STEPPER 8	1
	12v	2
	STEPPER 9	3
	STEPPER 10	4
	12v	5
	STEPPER 11	6

19 7 - Segment LED Display

LOCATION	TYPE
J19	16W JST RA TYPE



Function	O/P	Pin	Pin	O/P	Function
Solenoid #2	DLS_7	1	2	12v	External
Prize Vend #5	DLS_8	3	4	12v	External
BOT Wheel C	DLS_9	5	6	12v	External
Ticket Vend #3	DLS_10	7	8	DHS_10	Ticket Vend #3
BOT Wheel D	DLS_11	9	10	GND	
BOT Wheel L	DLS_12	11	12	GND	
Ticket Vend #4	DLS_13	13	14	DHS_13	Ticket Vend #4
	GND	15	16	GND	

20 Cabint and Switch LED Drives

LOCATION	TYPE
J20	34W JST RA TYPE

Function	O/P	Pin	Pin	O/P	Function
L/H CONT - R	LO 0	1	2	LO 16	
L/H CONT - G	LO 1	3	4	LO 17	
L/H CONT - B	LO 2	5	6	LO 18	
R/H CONT - R	LO 3	7	8	LO 19	
R/H CONT - G	LO 4	9	10	LO 20	
R/H CONT - B	LO 5	11	12	LO 21	
	LO 6	13	14	LO 22	
	LO 7	15	16	LO 23	
	LO 8	17	18	LO 24	
	LO 9	19	20	LO 25	
	LO 10	21	22	LO 26	
	LO 11	23	24	LO 27	
	LO 12	25	26	LO 28	
	LO 13	27	28	LO 29	
	LO 14	29	30	LO 30	
BILLBOARD - W	LO 15	31	32	LO 31	
	GND	33	34	GND	

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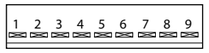
21 SERVICE

LOCATION	TYPE
J21	9W JST NH



Function	O/P	Pin
	SW1	1
	SW2	2
	GND	3
	+5V	4
VOLUME CONT		5
	GND	6
	+12V	7
COIN IN		8
	GND	9

22 MOTOR PORT A

LOCATION	TYPE
J22	6W JST VH - VNR-6N

Function	O/P	Pin
	STEPPER 0	1
	12v	2
	STEPPER 1	3
	STEPPER 2	4
	12v	5
	STEPPER 3	6

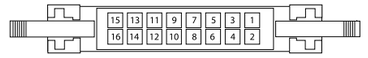
23 MOTOR PORT B

LOCATION	TYPE
J23	6W JST VH - VNR-6N

Function	O/P	Pin
TOP DC DRIVE	STEPPER 4	1
	12v	2
BOT DC DRIVE	STEPPER 5	3
	STEPPER 6	4
	12v	5
	STEPPER 7	6

25 VEND OUTPUTS

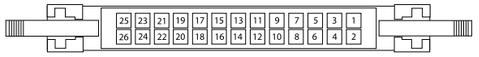
LOCATION	TYPE
J25	16W JST RA TYPE



Function	O/P	Pin	Pin	O/P	Function
Solenoid #2	DLS_7	1	2	12v	External
Prize Vend #5	DLS_8	3	4	12v	External
BOT Wheel C	DLS_9	5	6	12v	External
Ticket Vend #3	DLS_10	7	8	DHS_10	Ticket Vend #3
BOT Wheel D	DLS_11	9	10	GND	
BOT Wheel L	DLS_12	11	12	GND	
Ticket Vend #4	DLS_13	13	14	DHS_13	Ticket Vend #4
	GND	15	16	GND	

26 DIGITAL INPUTS MUX16-31

LOCATION	TYPE
J26	26W JST RA TYPE



Function	I/P	Pin	Pin	I/P	Function
+5V		1	2		+5V
DIGIN	MUX16	3	4	MUX17	DIGIN
DIGIN	MUX18	5	6	MUX19	DIGIN
GND		7	8		GND
DIGIN	MUX20	9	10	MUX21	DIGIN
DIGIN	MUX22	11	12	MUX23	DIGIN
GND		13	14		GND
DIGIN	MUX24	15	16	MUX25	DIGIN
DIGIN	MUX26	17	18	MUX27	DIGIN
GND		19	20		GND
DIGIN	MUX28	21	22	MUX29	DIGIN
DIGIN	MUX30	23	24	MUX31	DIGIN
+12V		25	26		+12V

27 MOTOR PORT D

LOCATION	TYPE
J27	6W JST VH - VNR-6N

Function	O/P	Pin
	STEPPER 12	1
	12v	2
	STEPPER 13	3
	STEPPER 14	4
	12v	5
	STEPPER 15	6

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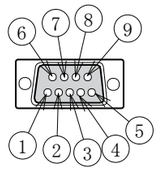
28 COMMS RS232

LOCATION	TYPE
J28	9W D Type Female



Function	O/P	Pin
-		1
RXD		2
TXD		3
-		4
GND		5
-		6
RTS		7
CTS		8
-		9

29 COMMS RS232

LOCATION	TYPE
J29	5W JST NH

Function	O/P	Pin
RTS		1
RXD		2
TXD		3
CTS		4
GND		5

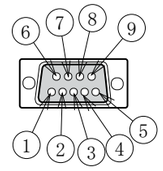
30 CAN PORT

LOCATION	TYPE
J30	3W JST NH

Function	O/P	Pin
CAN1_H		1
CAN1_L		2
GND		3

31 CAN PORT

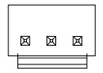
LOCATION	TYPE
J31	9W D Type Female



Function	O/P	Pin
-		1
CAN1_L		2
-		3
-		4
GND		5
GND		6
CAN1_H		7
-		8
-		9

32 AUDIO BRIDGE

LOCATION	TYPE
J32	3W JST NH



Function	O/P	Pin
BRIDGE		1
NOT USED		2
BRIDGE		3

33 AUDIO

LOCATION	TYPE
J33	4W JST NH

Function	O/P	Pin
SPKR L		1
Common		2
SPKR R		3
Common		4

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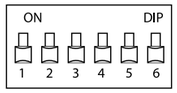
(34) DIP SWITCH

LOCATION	TYPE
SW1	6W DIP SW



Usage differs depending on game software. Set accordingly to the instructions given in this service manual under the section of TEST and DISPLAY DATA - DIP SWITCH SETTINGS

The factory settings when a game board (RedOne) is purchased as a stand alone unit

No. 1	No. 2	No.3	No. 4	No. 5	No. 6
OFF	OFF	OFF	OFF	OFF	OFF

16-5 REPLACING THE BUTTON BATTERY

⚠ WARNING

- **Make sure you do not damage the printed board and wires. Such damage can lead to electric shock, short circuit and fire hazard.**
- **To prevent overheating, explosion, or fire:**
- **Do not recharge, disassemble, heat, incinerate, or short the battery.**
- **Do not allow the battery to come into direct contact with metallic objects or other batteries.**
- **To preserve the battery, wrap it in tape or other insulating material.**
- **Follow local regulations when disposing of the battery. Improper disposal can damage the environment.**
- **Even the site maintenance personnel or other qualified professionals must not perform replacement operations for parts not described in this manual. In the event that such work is required either contact the office listed in this manual or first confirm the procedure with the place or office of purchase. Failure to do so may lead to electric shock or short circuit.**
- **Do not turn on the power with current carrying parts exposed. Doing so could result in electric shock or short circuit.**

STOP IMPORTANT

- **The batteries in RedOne can be used for approximately 4 years of standard usage. If the battery appears to require replacement sooner than 4 years it is more likely that an error has occurred with some other part of the board. Rather than exchanging the battery requesting repair of the board itself may be more appropriate.**
- **Static electricity from your body may damage some electronics devices on the IC board. Before handling the IC board, touch a grounded metallic surface so that the static electricity can be discharged.**
- **To avoid risk of malfunction and damage:**
- **- Make sure the positive and negative ends are aligned correctly.**
- **- Use only batteries approved for use with this unit.**

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17 DESIGN-RELATED PARTS

For the warning display stickers, refer to Section 1.

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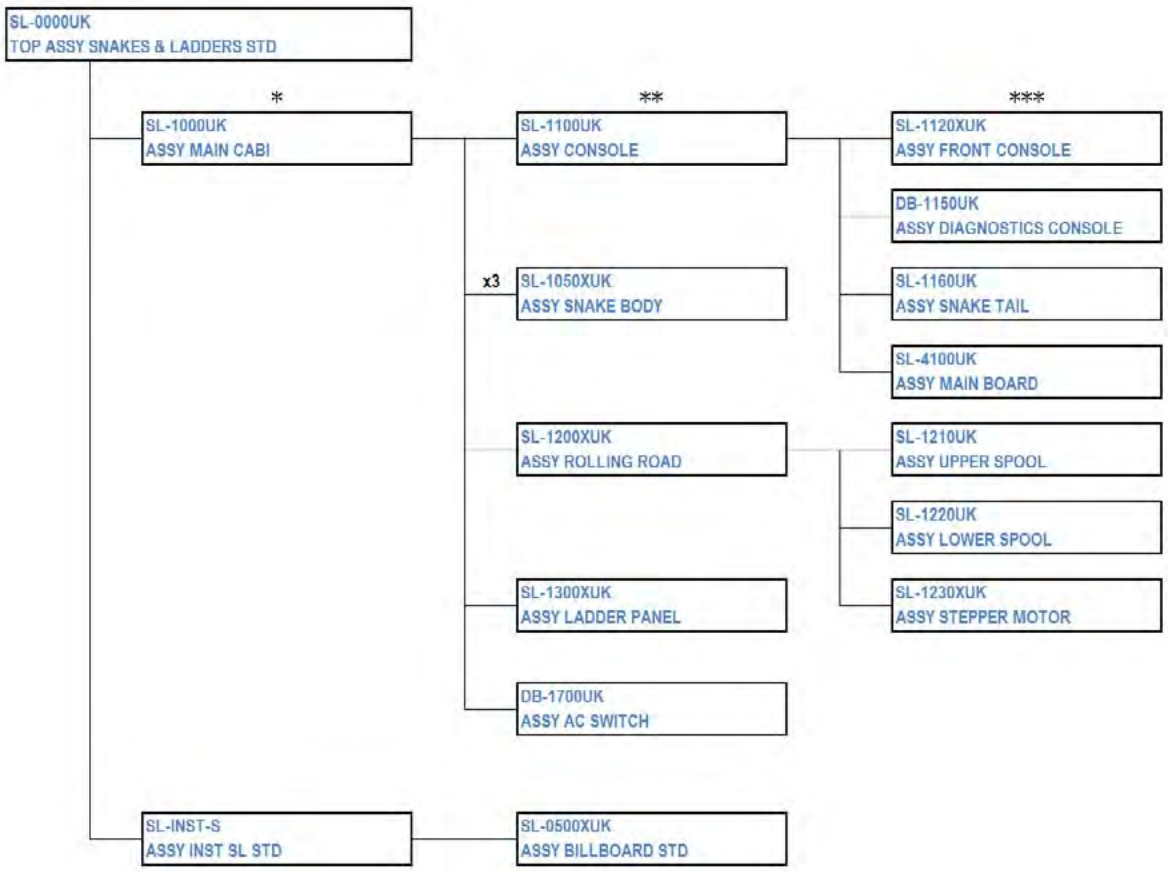
18 PARTS LIST

TOP ASSY SEGA SNAKES & LADDERS BOM STRUCTURE



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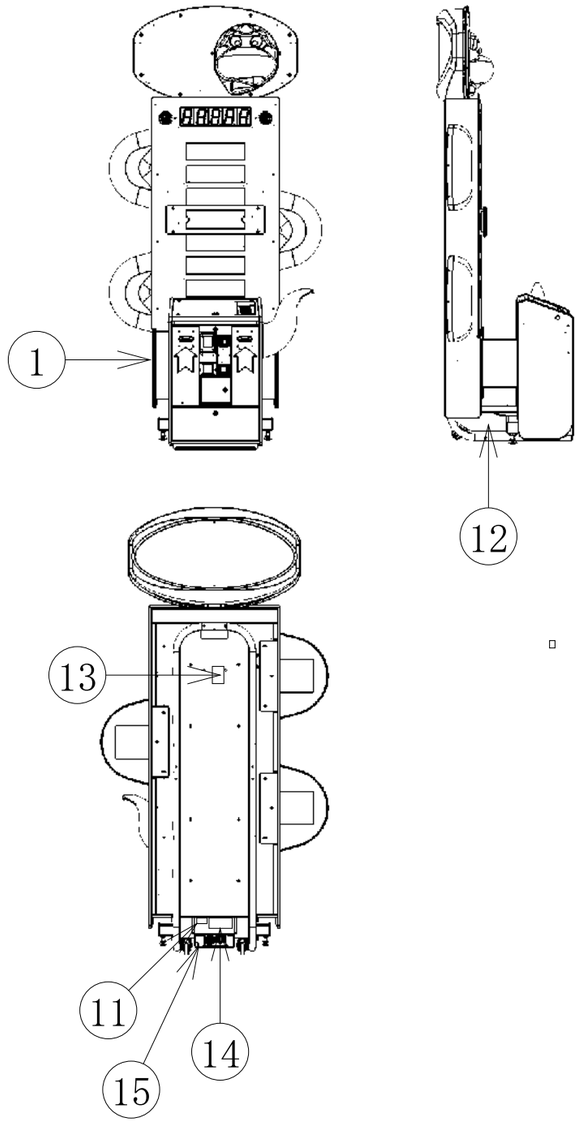
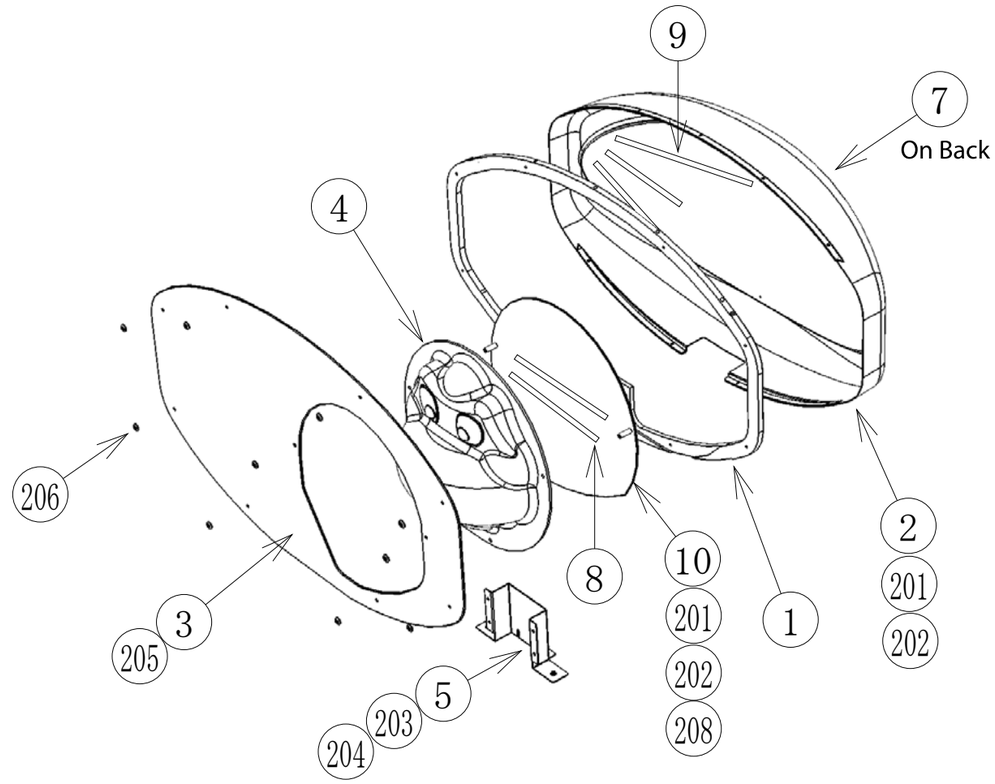
① ASSY TOP SNAKES & LADDERS (SL-0000UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
*1	SL-1000UK	ASSY MAIN CABI	1
*11	421-7988-91UK	STICKER SERIAL NUMBER UK	1
*12	440-WS0010UK	LABEL WARNING HI-VOLTAGE	2
*13	440-WS0030UK	LABEL WARNING CAUTION	2
*14	LB1046	LABEL TESTED FOR ELEC. SAFETY	1
*15	LB1130	LABEL WEEE WHEELIE BIN	1
*401	SL-INST-S	ASSY INST SL STD	1
*410		PALLET DB STD	1
*411		SHRINK WRAP DB STD	1

② ASSY BILLBOARD (SL-0500XUK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-0501XUK	BILLBOARD FRAME	1
***2	BE-0502UK	BILLBOARD HEADER	1
***3	SL-0503XUK	BILLBOARD COVER	1
***4	SL-0520XUK	SNAKE HEAD VAC	1
***5	SL-0507UK	BRKT BILLBOARD LOCATING	1
***7	SL-0505UK	HEADER INSERT	1
***8	SL-6005UK	ASSY LED RIGID WHITE 400	3
***9	SL-6006UK	ASSY LED RIGID WHITE 520	2
***10	SL-0508UK	PANEL SNAKE HEAD LED	1
***201	008-0S0412	M4X12 TMP PRF STN	11
***202	068-441616	M4 WSHR 16OD FLT PAS	11
***203	030-000612-S	M6X12 BLT W/S PAS	4
***204	068-652016	M6 WSHR 20OD FLT PAS	4
***205	080-B00420	M4X20 TMP PRF BH PAS	10
***206	280-6686-01UK	4.5X16X4 SP WSHR	10
***208	280-T41030-1	PILLAR M4 TYPE 1 9.5OD 30L	2
***301	SL-60008UK	WH BILLBOARD	1

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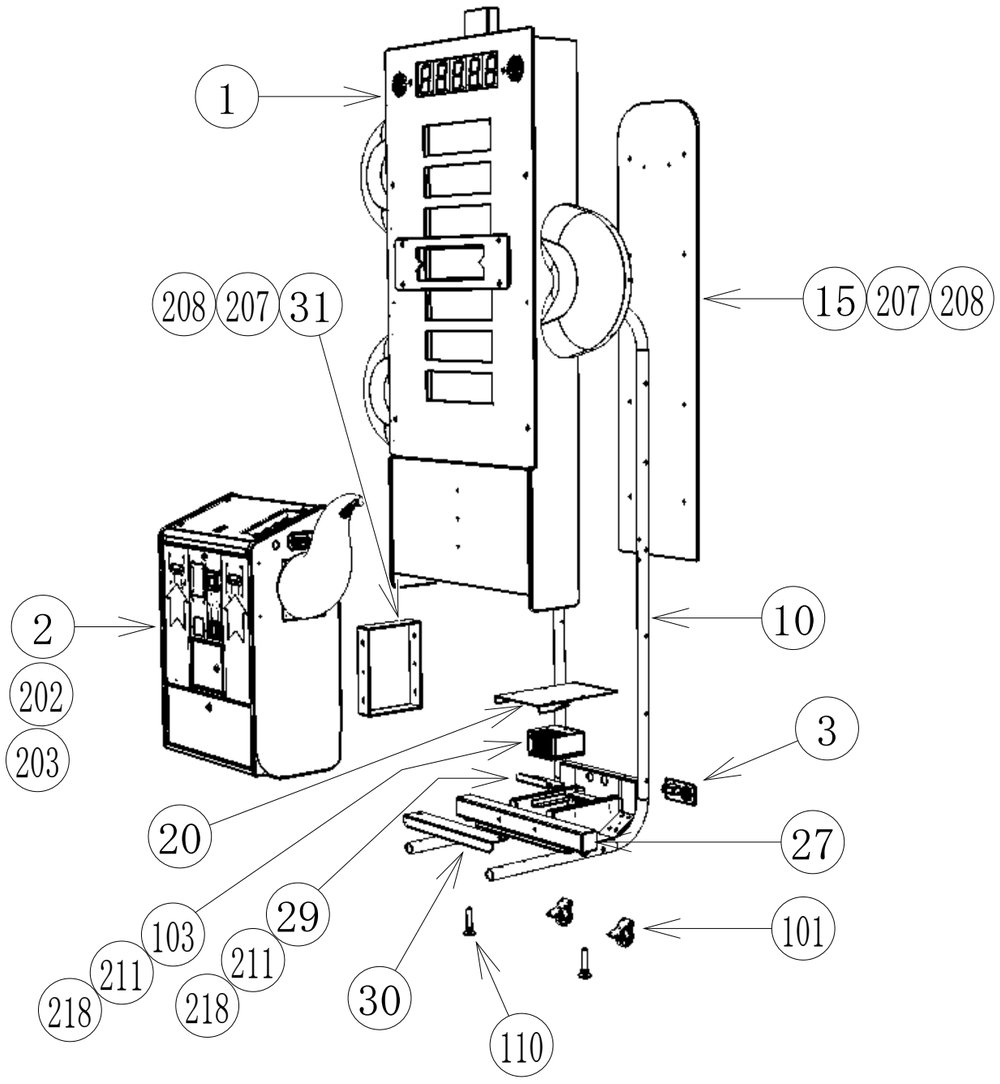
③ ASSY MAIN CABINET (SL-1000UK) (D-1/2)



③ ASSY MAIN CABINET (SL-1000UK) (D-2/2)

ITEM NO	PART NUMBER	DESCRIPTION	
**1	SL-1001UK	ASSY SNAKE CABI	
**2	SL-1100UK	ASSY CONSOLE	1
**3	DB-1700UK	ASSY AC UNIT	**1**
**10	DB-1001XUK	FRAME MAIN	**1**
**15	DB-1056UK	PANEL BACK	**1**
**20	DB-1053UK	COVER PSU	**1**
**27	DB-1051UK	FRAME SUB X MEMBER	**1**
**29	DB-1061UK	BRKT RETAINER SETBACK PSU	**1**
**30	DB-1058UK	BRKT FLOOR CLOSING	1
**31	SL-1020UK	BRACE CABINET	**1**
**101		CASTOR KONTOOR 2.5" 63MM FIXED	**2**
**103	400-200-0512-M	PSU MULTI IN OUT 80-0002-10	**1**
**109	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	**20**
**110	601-5699UK-01	LEG ADJUSTER M16X100 LNUT	2
**202	030-000850-S	M8X50 BLT W/S PAS	**6**
**203	068-852216	M8 WSHR 22OD FLT PAS	**6**
**207	030-000830-SB	M8X30 BLT W/S BLK	**24**
**208	068-852216-OB	M8 WSHR 22OD FLT BLK	**24**
**211	068-441616-OB	M4 WSHR 16OD FLT BLK	**12**
**218	050-F00400	M4 NUT FLG SER PAS	4
**301	DB-60001UK	WH DC DISTRIBUTION	1

18 PARTS LIST

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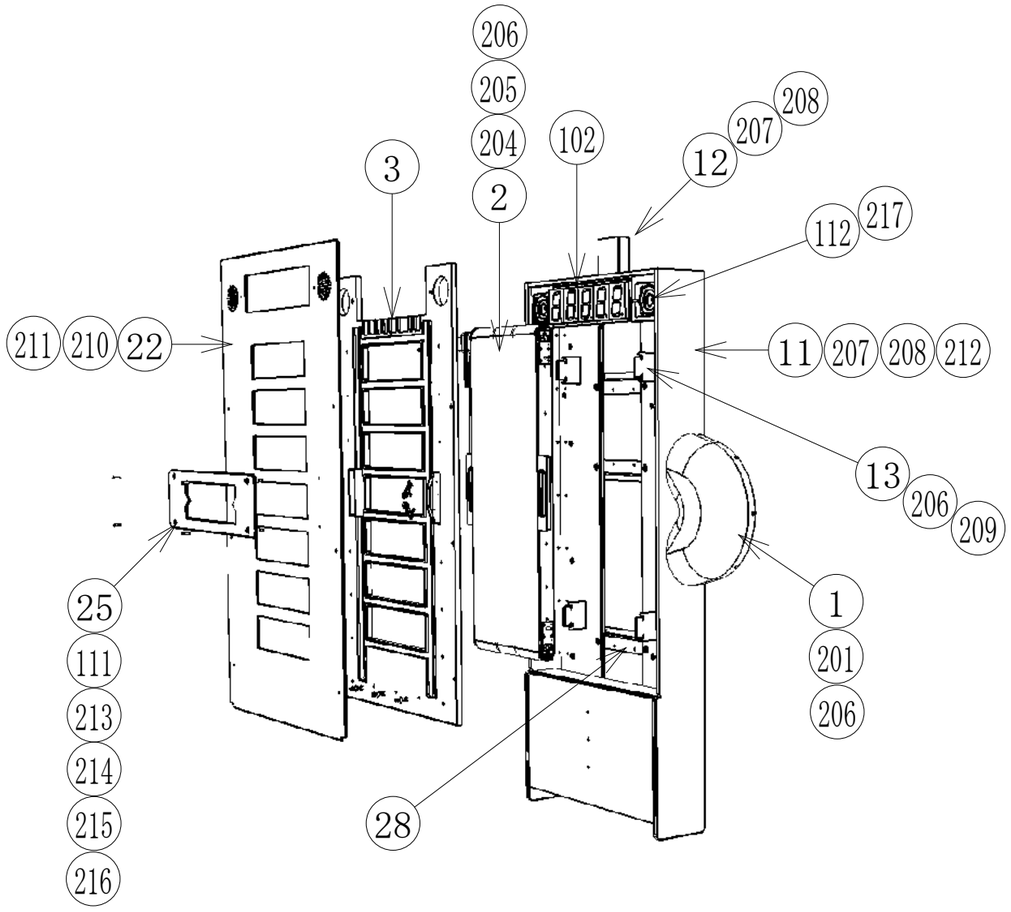
④ ASSY SNAKE CABINET (SL-1001UK) (D-1/2)



④ ASSY SNAKE CABINET (SL-1001UK) (D-2/2)

ITEM NO	PART NUMBER	DESCRIPTION	QTY
**1	SL-1050XUK	ASSY SNAKE BODY	3
**2	SL-1200XUK	ASSY ROLLING ROAD	1
**3	SL-1300XUK	ASSY LADDER PANEL	1
**11	SL-1002UK	FRONT CABINET	1
**12	SL-1003UK	BRKT BILLBOARD SUPPORT	1
**13	SL-1004XUK	BRKT ROLLING ROAD MOUNT	4
**22	SL-1012UK	FASCIA PANEL	1
**25	SL-1015UK	WIN PANEL	1
**28	DB-1052UK	BRACE DISC	4
**102	838-0024UK	PCBA-JACKPOT LED	1
**108	280-L01340-WX	STANDOFF 13MM WOOD	4
**111	280-T41030-1	PILLAR M4 TYPE1 9.5OD 30L	4
**112	130-010-04020	SPKR 4OHM 20W FR 10 HM 4898	2
**201	030-000635-S	M6X35 BLT W/S PAS	9
**204	050-F00600	M6 NUT FLG SER PAS	4
**205	060-S00600	M6 WSHR SPR PAS	4
**206	068-652016	M6 WSHR 20OD FLT PAS	21
**207	030-000830-SB	M8X30 BLT W/S BLK	24
**208	068-852216-OB	M8 WSHR 22OD FLT BLK	24
**209	030-000612-S	M6X12 BLT W/S PAS	8
**210	008-T00450-OB	M4X50 TMP PRF TH BLK	6
**211	068-441616-OB	M4 WSHR 16OD FLT BLK	12
**212	020-F00650-OB	M6X50 MSCR SKT CSK BLK	6
**213	008-B00416	M4X16 TMP BH PAS	4
**214	280-6686-01UK	4.5X16X4 SP WSHR	4
**215	000-P00416-W	M4X16 MSCR PAN W/FS PAS	4
**216	068-441616	M4 WSHR 16OD FLT PAS	4
**217	000-P00410-W	M4X10 MSCR PAN W/FS PAS	8
**303	SL-60001UK	WH STRUT A	1
**305	DB-60022UK	WH JACKPOT CAN	1
**309	SL-60003UK	WH LEDS SNAKE	1
**310	SL-60004UK	WH SNAKE BODY	1

18 PARTS LIST

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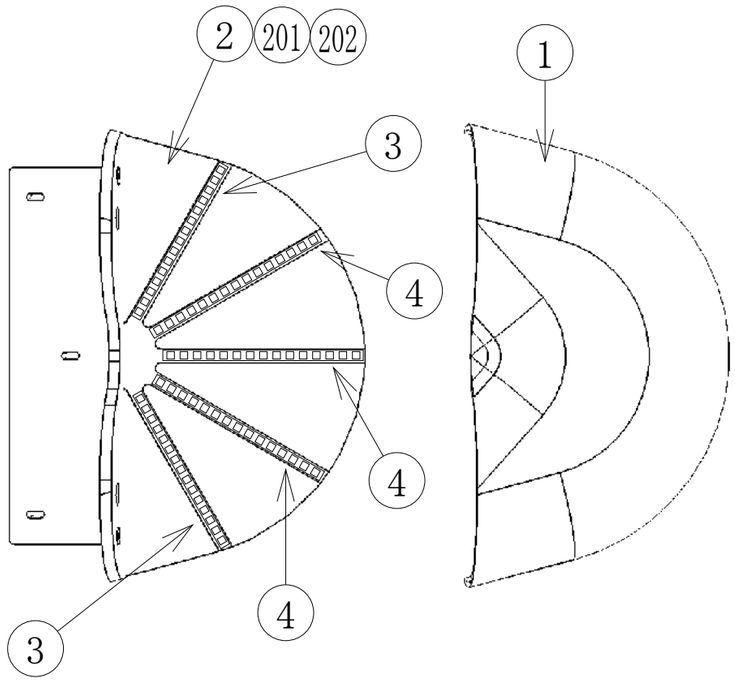
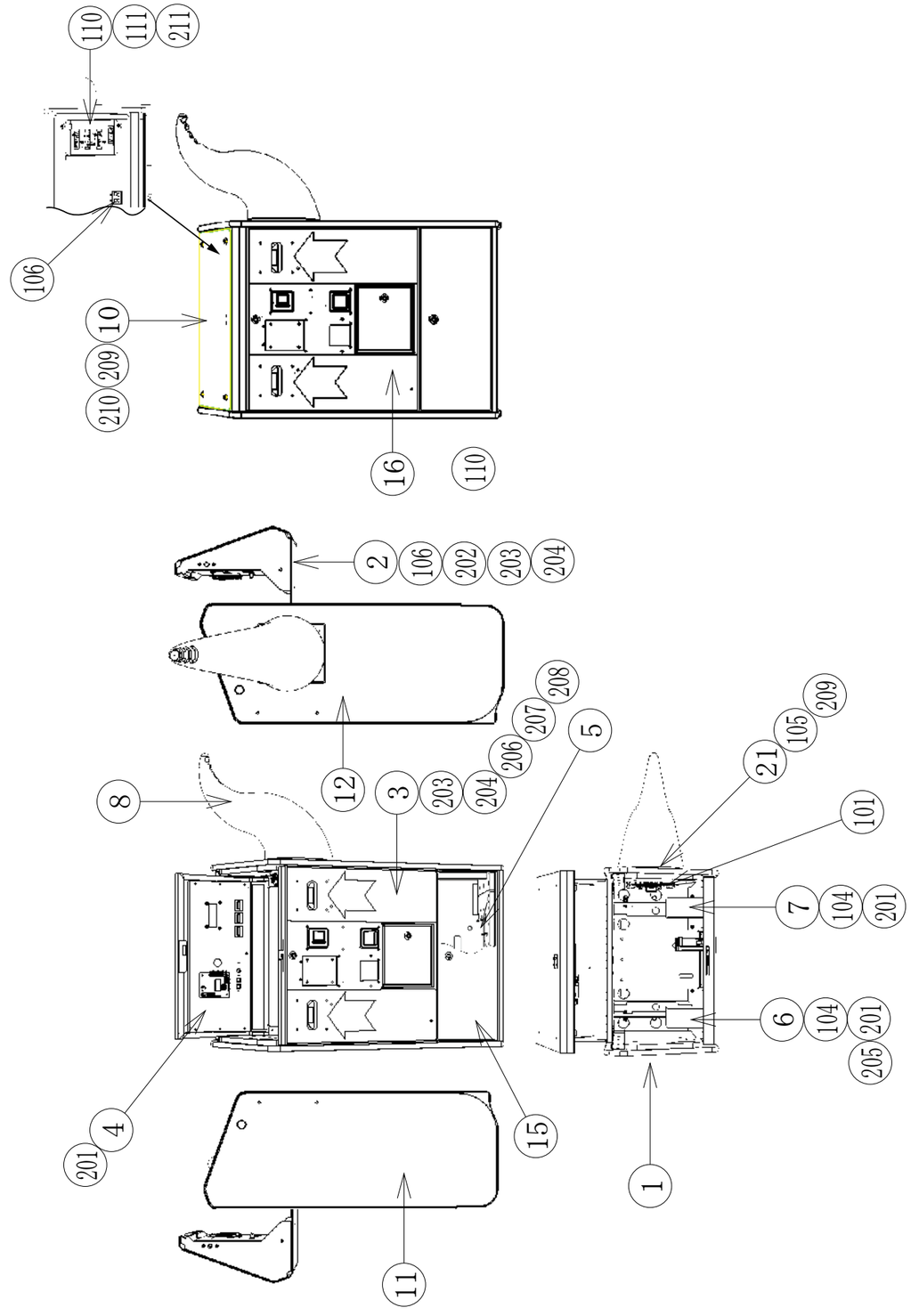
④ ASSY SNAKE BODY (SL-1050XUK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1051XUK	BASE SNAKE BODY	1
***2	SL-1052XUK	SNAKE BODY PANEL	1
***3	SL-6008UK	ASSY RIGID 160MM	2
***4	SL-6009UK	ASSY RIGID 200MM	3
***201	000-T00416-OB	M4X16 MSCR TH BLK	5
***202	068-441616-OB	M4 WSHR 16OD FLT BLK	5

⑤ ASSY CONSOLE CABI (SL-1100UK) (D-1/2)



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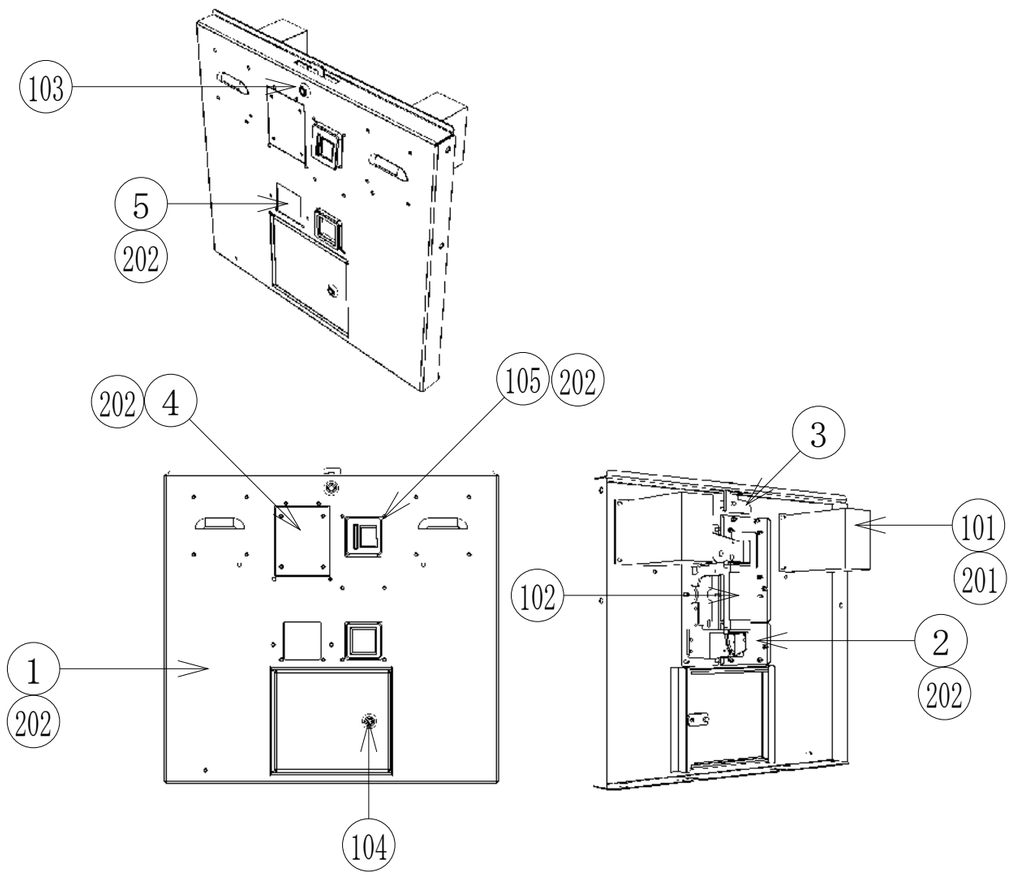
⑤ ASSY CONSOLE CABI (SL-1100UK) (D-2/2)

ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1101XUK	CONSOLE	1
***2	SL-1102UK	CONSOLE LID	1
***3	SL-1120XUK	ASSY FRONT CONSOLE	1
***4	DB-1150UK	ASSY DIAGNOSTICS CONSOLE	1
***5	SL-4100UK	ASSY MAIN BOARD	1
***6	DB-1105UK	HOLDER TICKET L	1
***7	DB-1106UK	HOLDER TICKET R	1
***8	SL-1160UK	ASSY SNAKE TAIL	1
***10	SL-1110UK	PLATE LID COVER	1
***11	SL-1111UK	STICKER CONSOLE L	1
***12	SL-1112UK	STICKER CONSOLE R	1
***15	SL-1115UK	STICKER CONSOLE DOOR MAIN BD	1
***16	SL-1116XUK	STICKER CONSOLE FRONT	2
***21	SL-1132UK	COVER TAIL LIGHT	1
***101	601-0002-RXUK	MECHA-R ANALOGUE HAPP	1
***102	FN1012	FAN GUARD METAL 120MM (FG-12)	1
***104	EP1820	SW MICRO LEVER RS 7064281	2
***105	EP1421	LED 12V RED RS 5414072	2
***106	EP1432	LED 0.8" 7 SEG FEM-080220BGWT1#M	2
***108	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	8
***109	280-A02064-WX	ROUTER TWIST D20 SO6.4 WOOD X	2
***110	838-0025UK	PCBA-RGB SERIAL	4
***111	OS1011	PCB FEET RICHCO LCBS	8
***201	000-P00410-W	M4X10 MSCR PAN W/FS PAS	18
***202	031-000640-OB	M6X40 CRG BLT BLK	5
***203	050-F00600	M6 NUT FLG SER PAS	15
***204	068-652016	M6 WSHR 20OD FLT PAS	13
***205	000-P00320	M3X20 MSCR PAN PAS	4
***206	030-000830-SB	M8X30 BLT W/S BLK	4
***207	068-852216-OB	M8 WSHR 22OD FLT BLK	4
***208	020-F00650-OB	M6X50 MSCR SKT CSK BLK	4
***209	008-B00416	M4X16 TMP BH PAS	6
***210	280-6686-01UK	4.5X16X4 SP WSHR	4
***211	000-F00308	M3X8 MSCR CSK PAS	8
***301			
***302	DB-60038UK	WH CONTROL PNL	1
***303	SL-60014UK	WH TAIL TO CTRL PANEL ILLUM	1
***304	SL-60015UK	WH CTRL PANEL ILLUM TO CABINET	1
***305	SL-60022UK	WH CONTROLLERS	1

⑥ ASSY FRONT CONSOLE (SL-1120XUK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
****1	SL-1121XUK	FRONT CONSOLE	1
****2	SL-1122UK	BRKT DUAL MECH MOUNT	1
****3	DB-1123UK	TNG LID	1
****4	SL-1124UK	PLATE DBA DOWNSTACKER BLANK	1
****5	SL-1125UK	BRKT DUAL MECH REJECT BLANK	1
****101	220-0001-01UK	TICKET VEND UNIT TD-963CR	2
****102	220-5610-01	COIN MECH SR3	1
****103	220-5575UK	LOCK (J9117) KEY TO LIKE 22MM W CAM	1
****104	220-5574UK	LOCK KEYED DIFFERENT 7087-10	1
****105	220-5786-R	A0710 IL FRONT PLATE ROHS COMPLIANT	1
****201	050-U00400	M4 NUT NYLOK PAS	8
****202	050-F00400	M4 NUT FLG SER PAS	19

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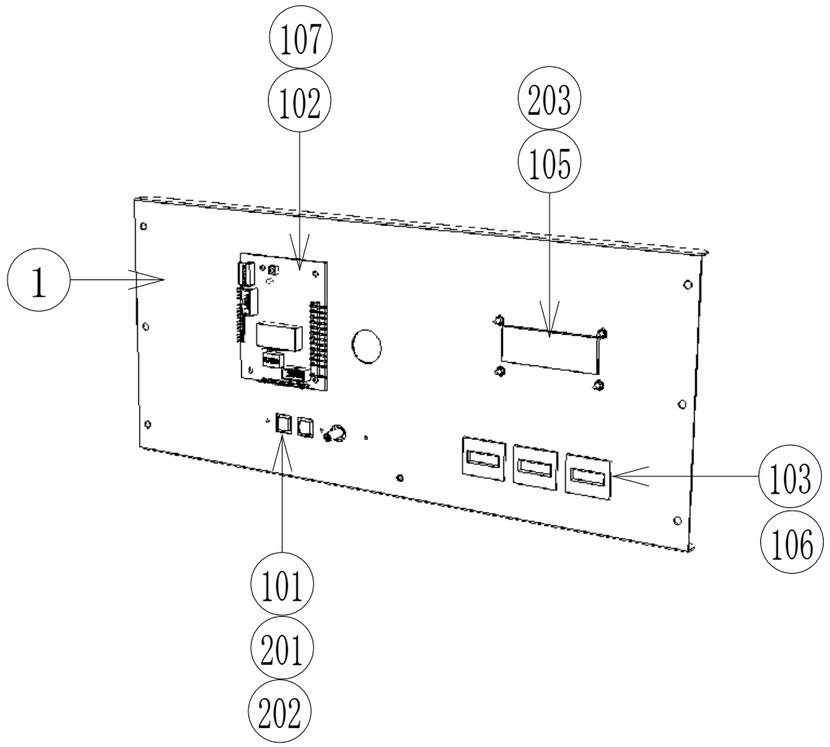
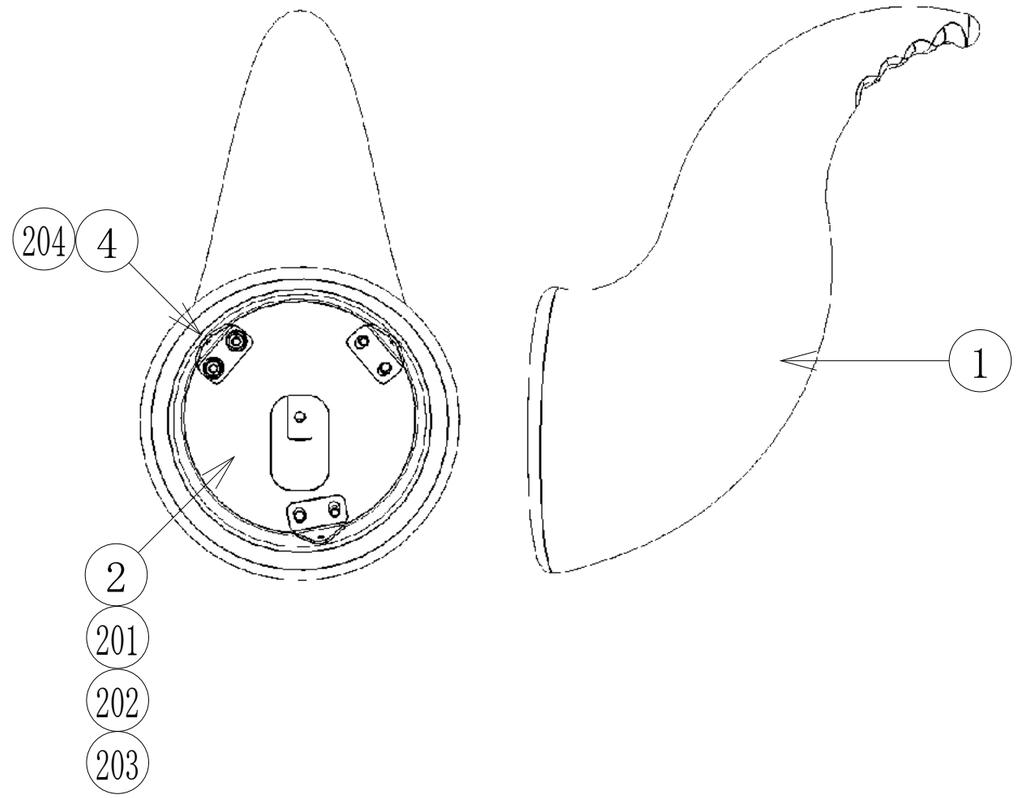
⑦ ASSY DIAGNOSTICS CONSOLE (DB-1150UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
****1	DB-1151UK	BRKT DIAGNOSTICS	1
****101	838-14548-01AUK	SW & VOL CTL BD	1
****102	EP1380-01	EXCEL CREDIT BOARD	1
****103	220-5643UK	12V COIN METER	3
****105	EP1429	LCD MDL 2X16 PC1602LRS	1
****106	OS1098	CRIMP BELL END SMALL	6
****107	280-L00706-PM	STANDOFF 6.4MM HOLE PM	4
****201	000-P00308	M3X8 MSCR PAN PAS	3
****202	068-330808-PN	M3 WSHR 8OD FLT NYLON	11
****203	000-F02508	M2.5X8 MSCR CSK BZ	4

⑧ ASSY SNAKE TAIL (SL-1160UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1161UK	TAIL SNAKE	1
***2	SL-1163UK	BRKT TAIL MOUNT	1
***4	SL-1164UK	BRKT TAIL SUPPORT	3
***201	030-000612	M6X12 BLT PAS	3
***202	060-S00600	M6 WSHR SPR PAS	3
***203	068-652016	M6 WSHR 20OD FLT PAS	6
***204	050-U00600	M6 NUT NYLOK PAS	3

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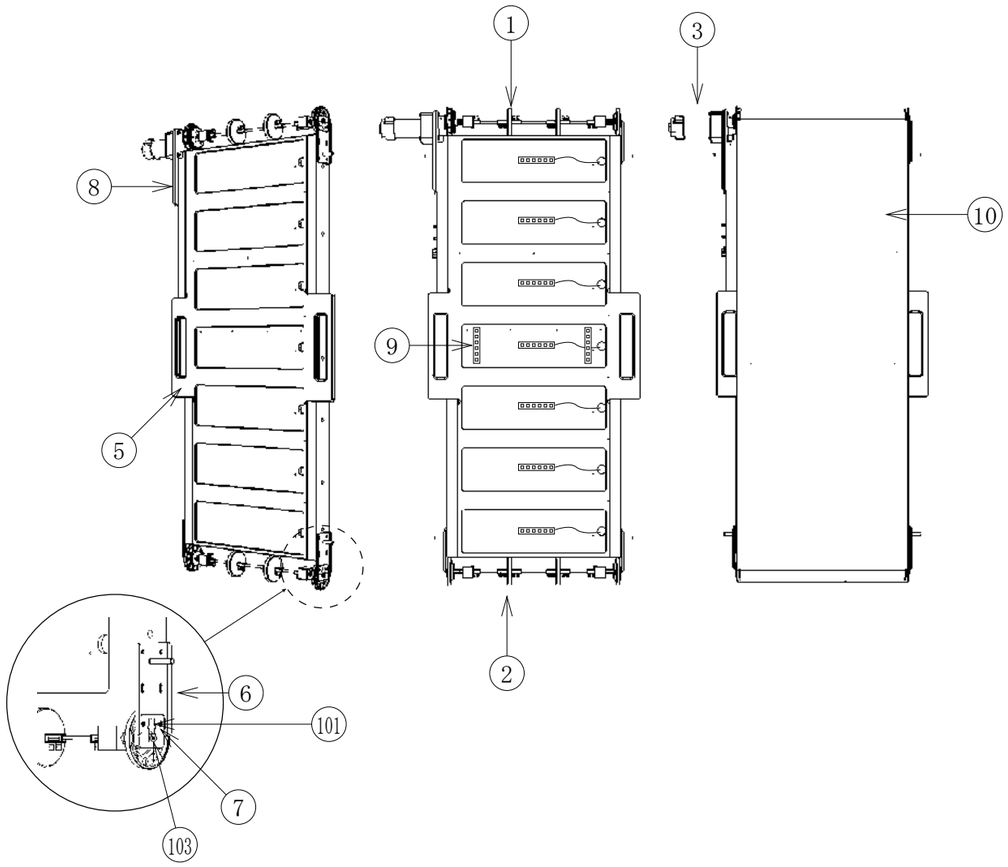
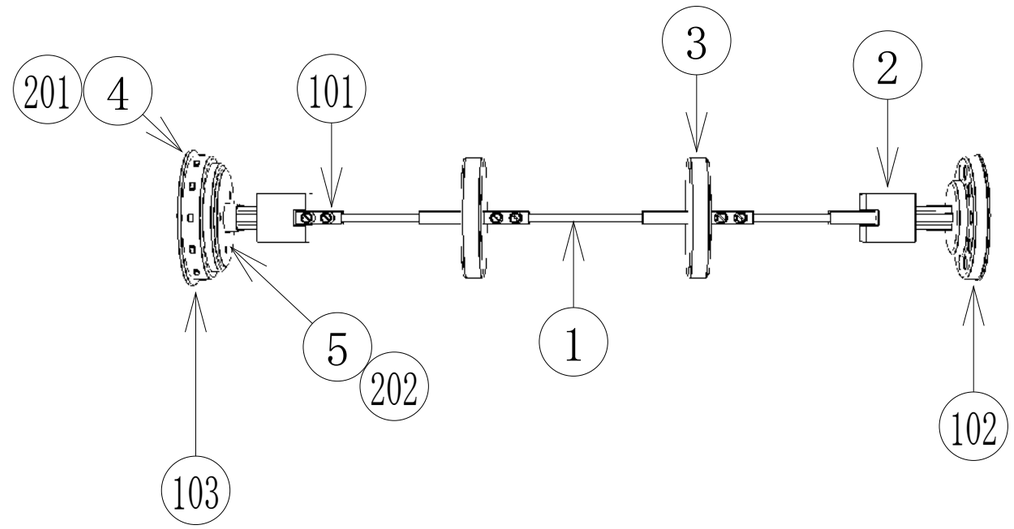
⑨ ASSY TRACKER / ROLLING ROAD (SL-1200XUK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1210UK	ASSY UPPER SPOOL	1
***2	SL-1220UK	ASSY LOWER SPOOL	1
***3	SL-1230XUK	ASSY STEPPER MOTOR	1
***5	SL-1202XUK	BOARD FEATURE	1
***6	SL-1203XUK	BRKT SPOOL MOUNT	3
***7	SL-1204UK	PLATE SPOOL STOP	3
***8	SL-1207XUK	PLATE PANEL MOUNT	1
***9	SL-6001UK	ASSY LED BAND BACKLIGHT	9
***10	SL-1201-02UK	BAND 1.00 FEATURE	1
***101	125-0003UK	TENSION SPRING GAMESMAN G4-693	2
***102	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	8
***103	253-0006UK	NYLON BUSH GAMESMAN G4-674	3
***104	OS1249	P CLIP 6.5MM	18
***201	000-P00410-W	M4X10 MSCR PAN W/FS PAS	18
***202	000-P00406-W	M4X6 MSCR PAN W/FS PAS	6
***203	050-F00600	M6 NUT FLG SER PAS	3
***204	012-P03506-F	N6X1/4" S/TAP FLG PAS	18
***301	SL-60005UK	WH OPTO	1
***302	SL-60006UK	WH ROLLING ROAD LED	1
***303	SL-60007UK	WH LED LINK	8
***304	DB-60030UK	WH LED WHT	1

⑩ ASSY UPPER SPOOL (SL-1210UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1211UK	ROD UPPER SPOOL	1
***2	SL-1205XUK	BLOCK SPOOL	2
***3	SL-1206UK	DISC SPACER	2
***4	SL-1212UK	DISC BAND OUTER RETAINING	1
***5	SL-1213UK	DISC BAND INNER RETAINING	1
***101	EP1433	STRIP TERMINAL 1277 12WAY 16A 117-8397	0.5
***102	253-0004UK	BAND SPOOL GAMESMAN G3-477	1
***103	253-0005UK	BAND DRIVE SPOOL GAMESMAN G3-478	1
***104			
***201	000-P00425-W	M4X25 MSCR PAN W/FS PAS	3
***202	050-U00400	M4 NUT NYLOK PAS	3

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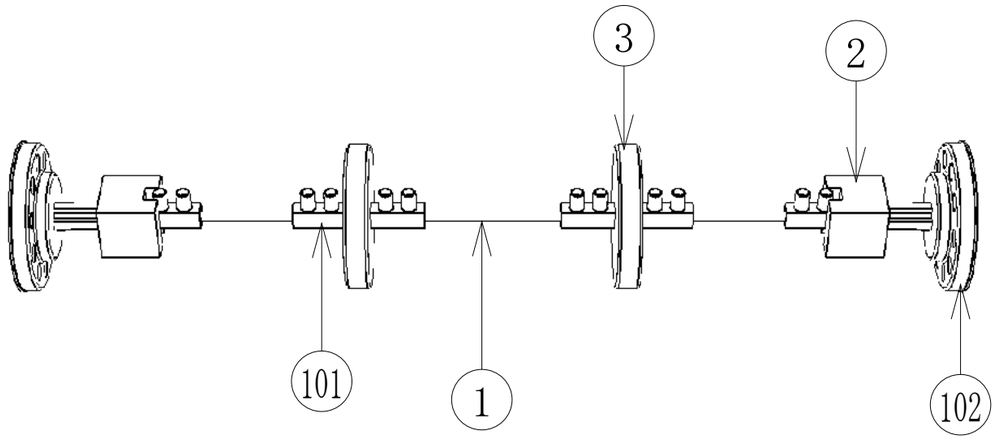
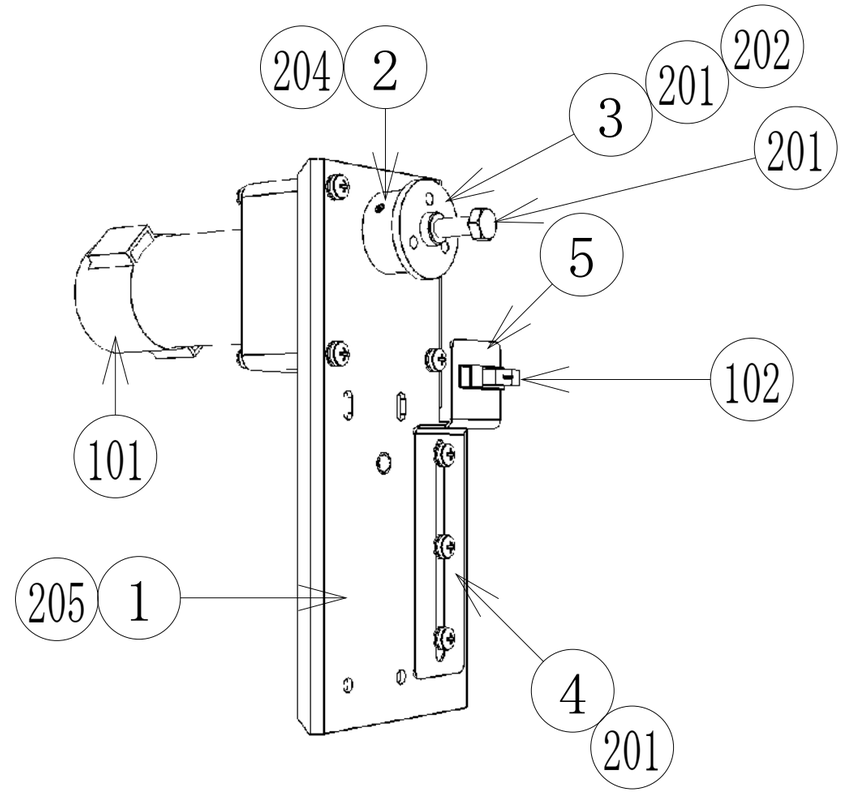
⑪ ASSY LOWER SPOOL (SL-1220UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1221UK	ROD LOWER SPOOL	1
***2	SL-1205XUK	BLOCK SPOOL	2
***3	SL-1206UK	DISC SPACER	2
***101	EP1433	STRIP TERMINAL 1277 12WAY 16A 117-8397	0.5
***102	253-0004UK	BAND SPOOL GAMESMAN G3-477	2

⑫ ASSY STEPPER MOTOR (SL-2130XUK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1231XUK	BRKT MOTOR	1
***2	DB-1452UK	COUPLER MOTOR SHAFT	1
***3	SL-1232XUK	COUPLER MOTOR PLATE	1
***4	SL-1233XUK	BRKT OPTO SENSOR	1
***5	SL-1234UK	BRKT OPTO GUIDE	1
***101	350-012-312UK	MOTOR DC 12V WGB 5EN X0229840	1
***102	EP1434	OPTIC SENSOR GAMESMAN A151	1
***201	000-P00410-W	M4X10 MSCR PAN W/FS PAS	10
***202	030-000620	M6X20 BLT PAS	1
***203			
***204	FAS-200013	M4X16 SKT CAP CRM	3
***205	050-F00600	M6 NUT FLG SER PAS	1

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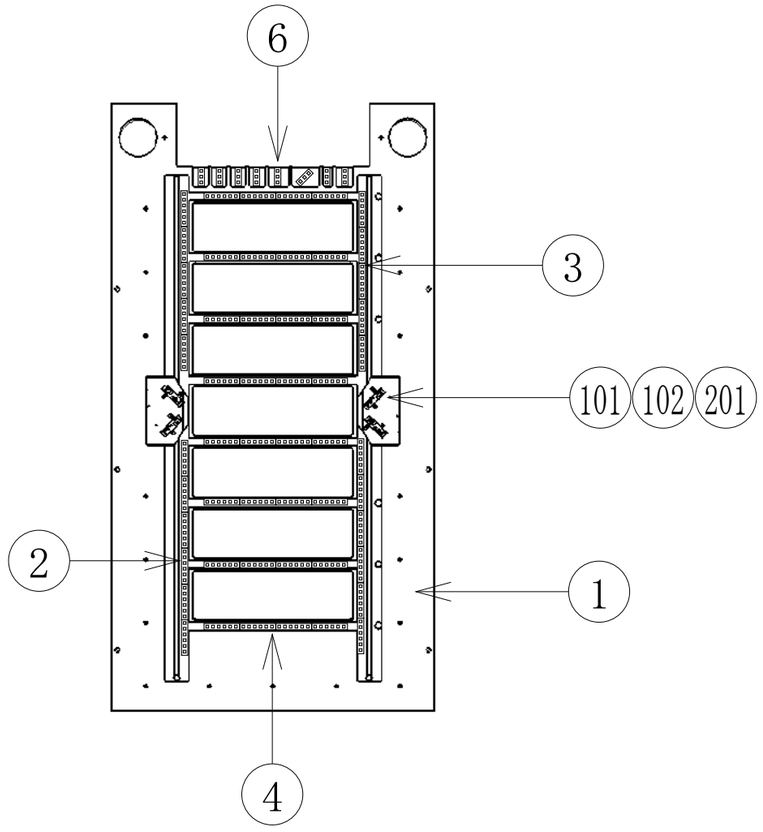
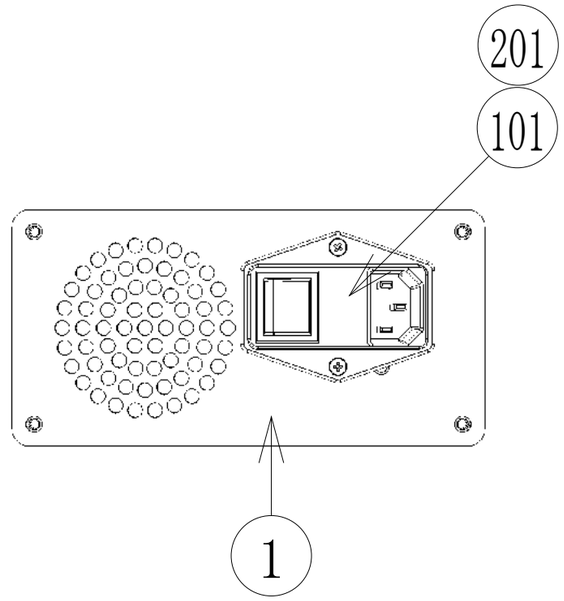
⑬ ASSY LADDER PANEL (SL-1300UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	SL-1301XUK	BOARD LADDER	1
***2	SL-6003UK	ASSY LED UPRIGHT LOWER	2
***3	SL-6002UK	ASSY LED UPRIGHT TOP	2
***4	SL-6004UK	ASSY LED LADDER RUNGS	8
***6	SL-6010UK	ASSY LED SUPER WIN	1
***101	838-0025UK	BOARD SERIAL RGB	4
***102	OS1011	PCB FEET RICHCO LCBS L-5-01	8
***103	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	21
***104	OS1247	ALUMINIUM STICKY CLIP	4
***201	012-P00308	N4X5/16" S/TAP PAN PAS	8
***303	DB-60033UK	WH SERIAL LED LINK	2
***304	DB-60041UK	WH RGB TERMINATOR	1
***305	SL-60016UK	WH CABINET TO WIN LINE RGB	1
***306	SL-60013UK	WH WIN LINE SERIAL LINK	1

⑭ ASSY AC SWITCH (DB-1700UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
***1	DB-1701UK	MAINS IN PLATE	1
***101	EP1381	FILTER IEC & SW 6A ROXBURGH	1
***201	000-F00310	M3X10 MSCR CSK PAS	2
***301	DB-60044UK	WH AC IN	1

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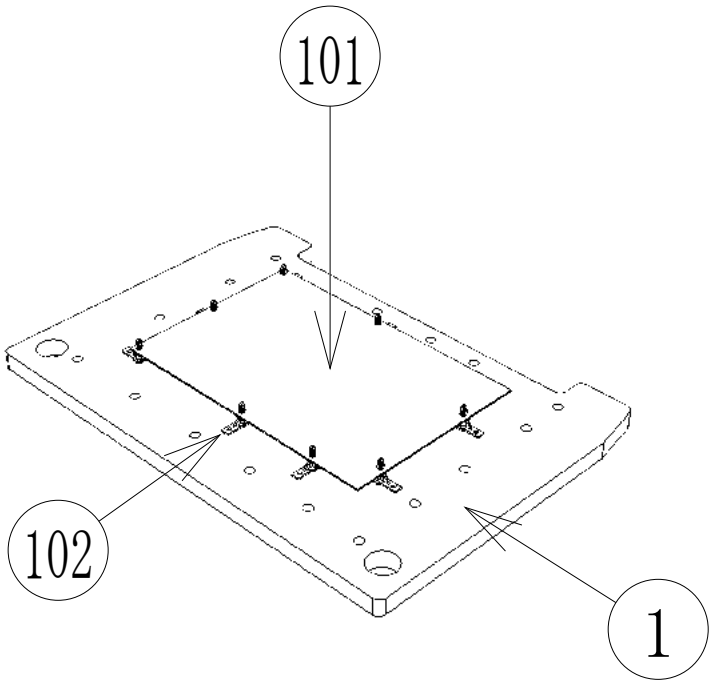
⑮ ASSY AC MAIN BD (SL-4100UK) (D-1/1)



ITEM NO	PART NUMBER	DESCRIPTION	QTY
****1	DB-4101UK	WOODEN BASE MAIN BD	1
****101	838-0023UK	PCBA - RED ONE	1
****102	280-L00640-WX	STANDOFF 6MM 4 HOLE WOOD XL	8
****103	280-A01264-WX	ROUTER TWIST D12 SO6.4 WOOD X	6
****104	280-A02064-WX	ROUTER TWIST D20 SO6.4 WOOD X	9
****302	DB-60009UK	WH DC RED ONE	1
****305	DB-60012UK	WH DIRECT OUTS	1
****309	DB-60016UK	WH ST MOTOR	1
****311	DB-60018UK	WH CAN A	1
****314	DB-60041UK	WH TERMINATOR	2
****315	DB-60042UK	WH SERIAL CAT 5	1

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19 WIRE COLOUR CODE TABLE

⚠ WARNING

The DC power wire color for this product is different from previous SEGA titles. Working from the previous wire colors will create a high risk of fire.

The color codes for the wires used in the diagrams in the following chapter are as follows.

A	PINK
B	SKY BLUE
C	BROWN
D	PURPLE
E	LIGHT GREEN

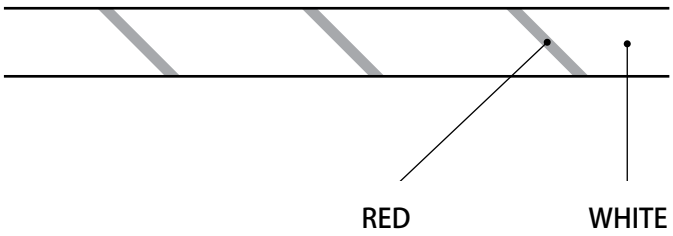
Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters.

1	RED
2	BLUE
3	YELLOW
4	GREEN
5	WHITE
7	ORANGE
8	BLACK
9	GRAY

If the right-hand side numeral of the code is 0, then the wire will be of a single color shown by the left-hand side numeral (see the above).

Note 1: If the right-hand side numeral is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one, the spiral color.

<Example> 51·····WHITE/RED



Note 2: The character following the wire color code indicates the size of the wire.

U :	AWG16
K :	AWG18
L :	AWG20
None :	AWG22

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(D-1/4)

EP1381 INLET, SW & FILTER
20L
COL
5A (T)
514-5078-5000
SWITCH
20L
43K
COL
EARTH PLATE
OUTSIDE WORLD
IEC C13
400-200-0512M
PSU MULTI OUTPUT
+5V +5V +5V GND GND GND -5V +12V -12V
ASSY MAIN BRD
A
A4
2/4
N/U
12V
CREDIT LED DISPLAY
CREDIT U
CREDIT T
10 WAY MTA-100 640621-9
DB-60038UK
CREDIT LED
B
C3
2/4
VOL
SERVICE
TEST
838-14548-01AUK
SW & VOL CTL BD
NH 6P CN1
EP1380-01 EXCEL
CREDIT BOARD
+12V
0V
COIN SIGNAL
12V
METER OUT
(MLX) 3069
DB-60038UK
220-5643UK
12V COUNTER
CRIMPS
C
B1
2/4
EP1429 LCD MDL 2x16 PC1602LRS
Vss Vdd Vo RS R/W E DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 A K
(MLX) C GRID
DB-60038UK
D
F4
2/4
TICKET METER 1
TICKET METER 2
220-5643UK
12V COUNTER
CRIMP
DB-60038UK
E
G2
2/4
SL-60022UK
LEFT
RIGHT
220-0001-01UK
TICKET VEND
UNIT TD-963CR
NOTCH
GND
ENABLE
12V
MOLEX 03-09-1042
DB-60024UK
F
F6
2/4

8	BLACK			43	EARTH WIRE	PAGE 1 OF 4	DRAWN
7	ORANGE	E	LIGHT GREEN	2	AWG18 UL1672		
5	WHITE	D	PURPLE	1	AWG20 UL1672		
4	GREEN	C	BROWN	U	AWG16 UL1015		
3	YELLOW	B	SKY BLUE	K	AWG18 UL1015		
2	BLUE	A	PINK	L	AWG20 UL1007		
1	RED	9	GRAY		AWG22 UL1007		
				T	AWG24 UL1007		

ALTERATION | PART NUMBER | DESCRIPTION

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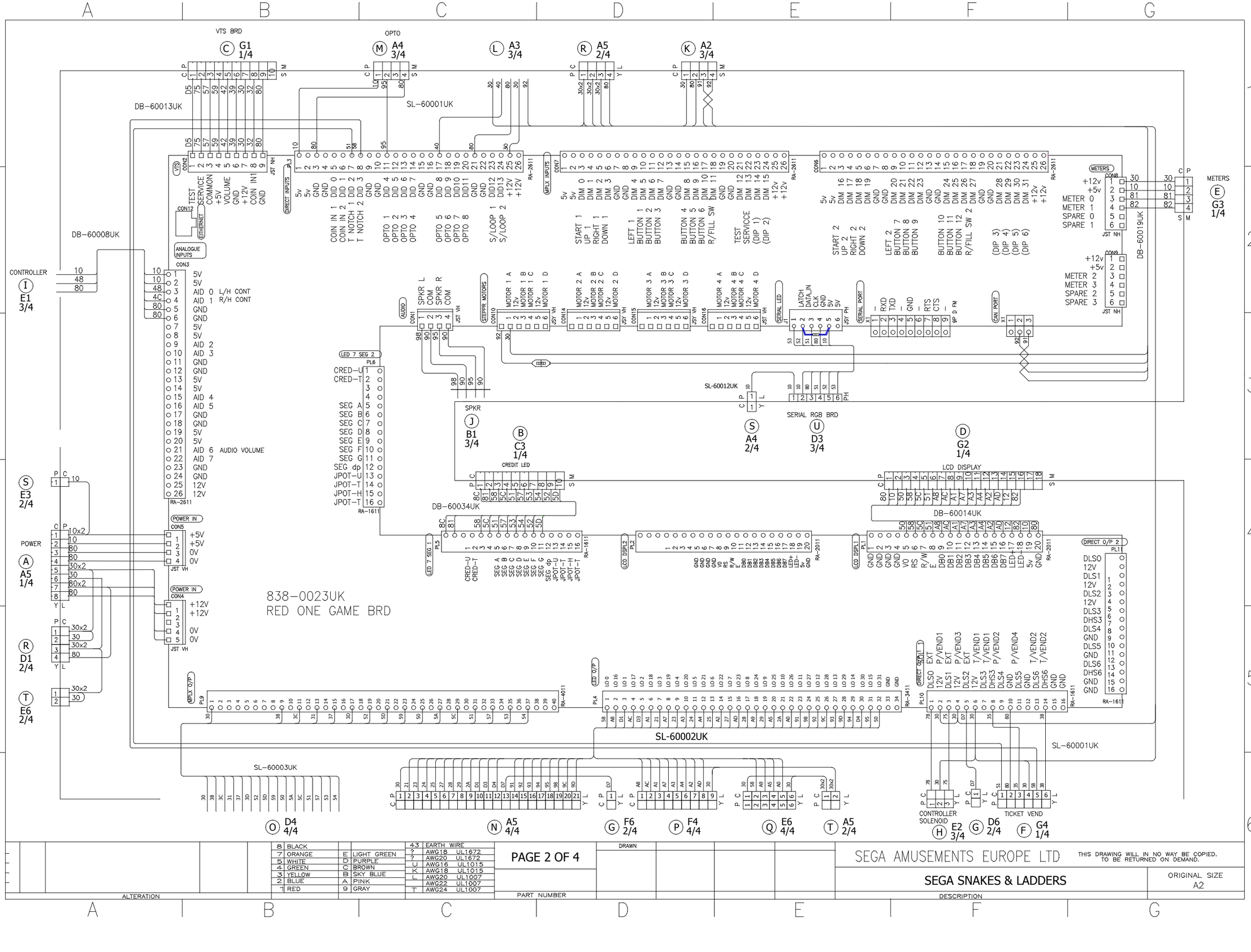
(D-2/4)



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(D-3/4)

SPEAKERS

J C3 2/4

98 90 130-010-04-020

95 90 130-010-04-020

SL-60017UK

WIN DISPLAY

838-0024UK PCBA JACKPOT LED

K D1 2/4

C P 1 2 3 4 S M

30 80 91 92

1 2 3 4 12V 0V CAN_H CAN_L

DB-60022UK

a b c d e f g dp

DIG 0 DIG 1 DIG 2 DIG 3 DIG 4

SL-60022UK

I A2 3/4

10 48 80

601-0002-RUK RIGHT CONTROLLER

H F6 3/4

C P 1 2 3 Y L

78 30

10 48 80

C P 1 2 3 A 20 C SM

5K POT

C P 78 30 1 2 80 80 S M

HANDLE LOCKOUT 12V SOLENOID

SERIAL RGB LED

TAIL ILLUMINATION

SL-60012UK

838-0025UK

U E3 2/4

10 10 80 51 52 53

J1 1 2 3 4 5 6 12V 5V GND C D L

J2 6 5 4 3 2 1 12V 5V GND C D L

JST PH JST PH

SL-60014UK

CONTROL PANEL ILLUMINATION

SL-60015UK

838-0025UK

50 50 50 50 50 50

DB-60033UK DB-60033UK DB-60033UK

V B5 3/4

C P 1 2 3 4 5 6 YL

10 10 80 51 52 53

M C1 2/4

30 40 80 30 92 K K

MOTOR

SL-60005UK

C P 1 2 3 4 S PNL M PNT

10 95 80

A C E K

EP PHOTO INTERUPTER

AMP 3 Way 179228-3 Housing and 179227-1 Crimp Terminals

WIN LINE RGB ILLUMINATION

SL-60013UK

SL-60016UK

V G4 3/4

C P 1 2 3 4 5 6 YL

10 10 80 51 52 53

838-0025UK

50 50 50 50 50 50

DB-60033UK DB-60033UK

R2 50 Ohm 1/2 W RESISTORS R1

DB-60041UK

8	BLACK			43	EARTH WIRE	PAGE 3 OF 4	DRAWN			SEGA AMUSEMENTS EUROPE LTD	THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.
7	ORANGE	E	LIGHT GREEN	?	AWG18 UL1672						
5	WHITE	D	PURPLE	?	AWG20 UL1672						
4	GREEN	C	BROWN	U	AWG16 UL1015					SEGA SNAKES & LADDERS	ORIGINAL SIZE A2
3	YELLOW	B	SKY BLUE	K	AWG18 UL1015						
2	BLUE	A	PINK	L	AWG20 UL1007						
1	RED	9	GRAY		AWG22 UL1007						
				T	AWG24 UL1007						
ALTERATION						PART NUMBER				DESCRIPTION	

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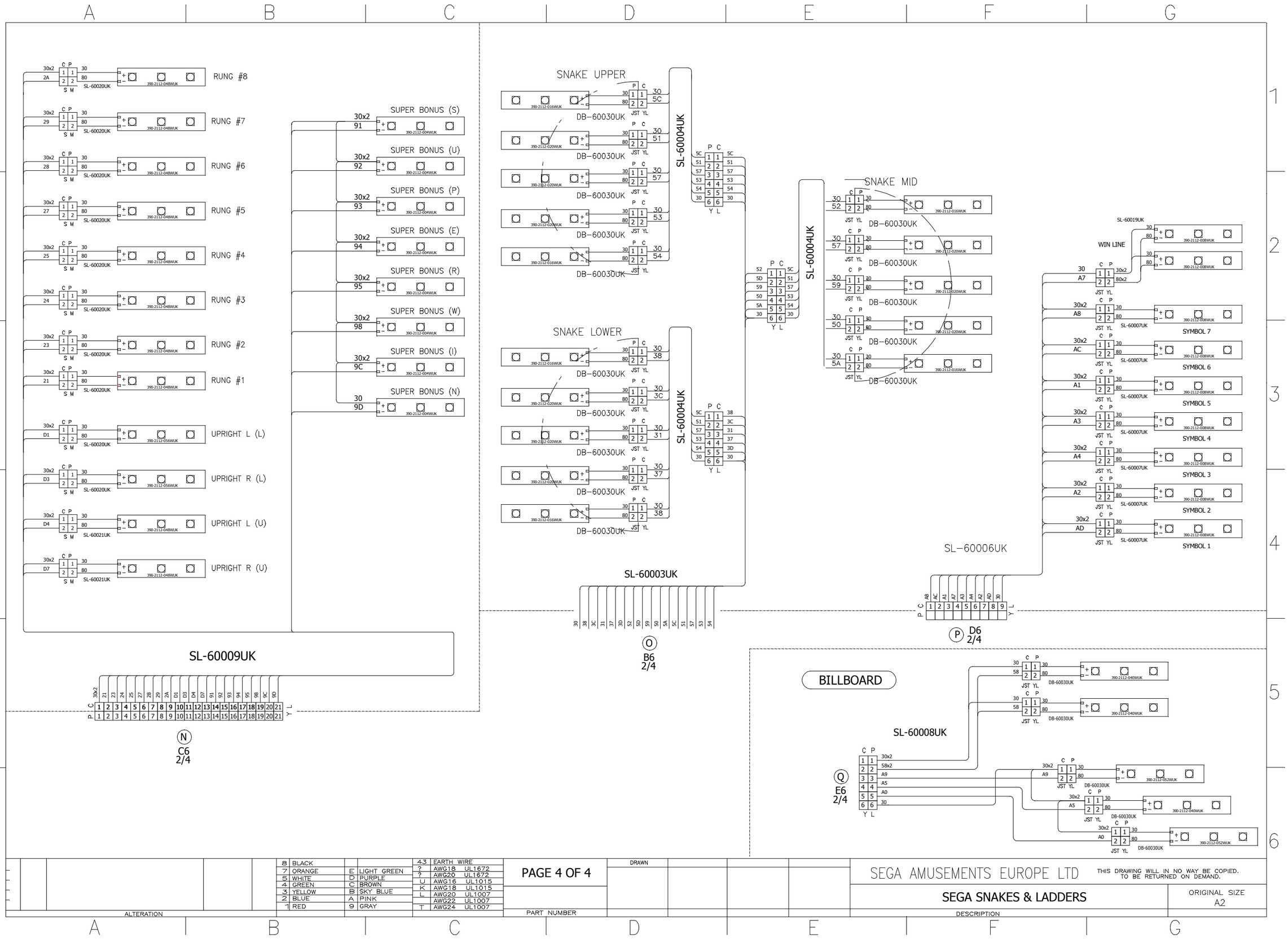
(D-4/4)



8	BLACK			4.3	EARTH WIRE		
7	ORANGE	E	LIGHT GREEN	?	AWG18 UL1672		
5	WHITE	D	PURPLE	?	AWG20 UL1672		
4	GREEN	C	BROWN	U	AWG16 UL1015		
3	YELLOW	B	SKY BLUE	K	AWG18 UL1015		
2	BLUE	A	PINK	L	AWG20 UL1007		
1	RED	9	GRAY		AWG22 UL1007		
				T	AWG24 UL1007		

PAGE 4 OF 4

DRAWN

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